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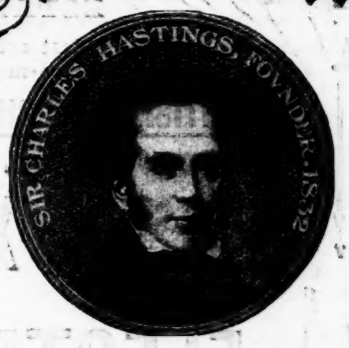

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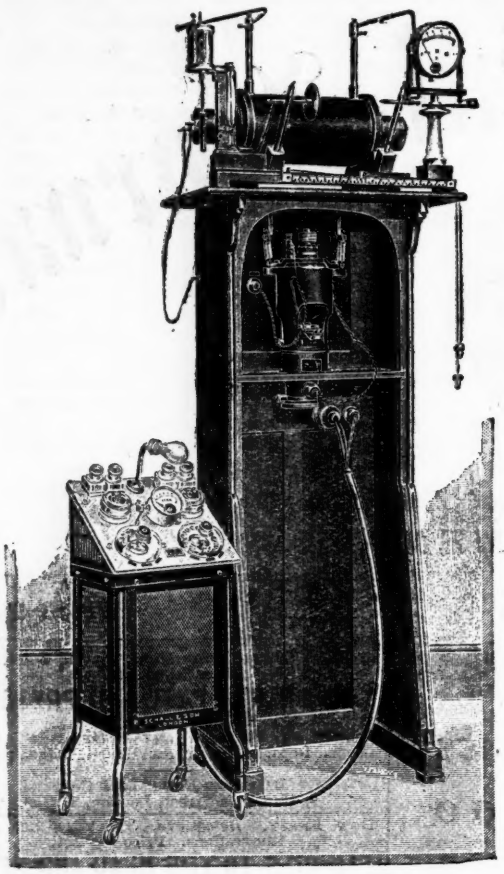

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Remarks ON BRACHIAL "NEURITIS" AND ITS TREATMENT.

BY

R. T. WILLIAMSON, M.D., F.R.C.P.,

CONSULTING PHYSICIAN TO THE ROYAL INFIRMARY, MANCHESTER.

THE term primary brachial "neuritis" may, I think, be fairly applied to certain cases in which the chief symptom is severe aching pain in one arm. Paralysis and well marked anaesthesia never occur; generally sooner or later the patient recovers. No signs of organic disease can be detected, and no organic disease of the nervous system follows. The symptoms are subjective, but we can have no doubt as to their severity in many cases.

No paralysis or atrophy of the muscles of the arm can be detected. The wrist jerk and other arm reflexes are obtained. The patient can recognize sensations of touch, pain, temperature, and the vibrating sensation (tested with a large tuning-fork) on the affected arm. The pupils, the legs, and the reflexes are all normal. Usually only one arm is affected. Occasionally both suffer, but not usually at the same time.

The nerve roots in the posterior triangle of the neck are often tender on pressure. The pain is of an aching character and often severe; acute attacks of great severity often occur, but the pain is not of the completely intermittent character of neuralgia. Sometimes it keeps the patient awake at night; in exceptional cases it is so severe that morphine is required. It may affect the whole arm down to the fingers, often chiefly the upper arm; it is usually not strictly localized to the distribution of a single nerve or nerve root. It is not localized to the joints. Often it is more severe when the arm hangs down by the side, and is less when the arm is supported by a sling so arranged that the elbow is supported and slightly raised. Movement, especially elevating the arm very high, increases the pain.

Paraesthesia in the arm is a symptom in some cases, and the patient may complain of "pins and needles" sensation when the hand is placed in water.

The symptoms of brachial neuritis are described in detail in the larger textbooks. Briefly stated, it is an affection of the arm somewhat similar to sciatica in the leg, but differs in that the pain is usually diffuse. The opportunities for pathological examination are exceedingly rare, but neuritis is the most probable lesion to account for the symptoms.

In this note I desire especially to draw attention (1) to the etiology of the affection, and especially to pressure on the nerve trunks of the brachial plexus in the posterior triangle of the neck as one exciting cause; and (2) to the value of supporting the arm in a suitably arranged sling.

The causes of brachial neuritis are (1) general, (2) local, (3) probably in most cases a combination of both.

The most common *general* causes are: Diabetes, gout, alcoholic excess, (?) influenza, (?) rheumatism, (?) neurasthenia.

Often we have a *local* cause, which in many cases probably would not have produced the neuritis without the combination of some general morbid condition. The chief local causes noted in cases coming under my own observation have been: Pressure on the nerve roots of the brachial plexus in the posterior triangle of the neck by a tight brace; sleeping with the arm raised so that the clavicle presses on the nerve roots in the posterior triangle; carrying a heavy weight on the shoulder which compresses the nerve roots just named; injury causing the shoulder to be suddenly forced backwards and contusion of the nerve roots; exposure of the side of the neck and shoulder to a cold draught or to damp.

The following abstracts of notes indicate some of the causes of this affection. To save repetition I may add that the symptoms in each case corresponded to those just described. They were entirely subjective; no paresis or anaesthesia was detected. No signs of organic disease of the nervous system or thorax ever developed.

CASE I.

A middle-aged gentleman whilst travelling by railway fell asleep with his left elbow raised and supported on the lower edge of the window of the compartment and his head resting on the left hand, the elbow being flexed. In this position the clavicle would be raised and pressed on the nerve roots of the brachial plexus in the posterior triangle of the neck.

On awaking he felt pain in the left arm which increased rapidly, and became so intense that he was unable to sleep, and injections of morphine were necessary. The pain was diffuse, all over the arm, and the symptoms were those of brachial neuritis as just described. No anaesthesia and no paresis or signs of organic disease of the nervous disease could be detected. Early organic intrathoracic disease was feared, but no signs could be detected. The pain continued for about a week. The patient was kept in bed, and the arm placed in an easy position on a pillow. Complete recovery ensued. He had suffered from similar symptoms many years previously, which had also been due to the same cause—falling asleep in a railway carriage with his elbow raised and resting on the edge of the carriage window, the elbow being flexed and the head resting on the hand.

Fifteen years after the second attack the patient was alive and doing active work.

By observation in the dissecting room (placing the finger in the position of the nerve roots in the posterior triangle of the neck) we can easily demonstrate that the nerve roots are liable to be compressed by the posterior surface of the clavicle when the elbow is raised very high, into the position just indicated.

CASE II.

A healthy middle-aged man had had severe pain for six weeks in the right arm; the nerve roots in the posterior triangle were tender on pressure; the symptoms of brachial neuritis were marked. No definite cause could at first be detected; there had been no injury. No signs of organic disease could be detected. The braces were tight, and the patient stated the symptoms had followed directly after commencing to wear a pair of new and tight braces. Considering that the tight braces had probably played some part in causing the neuritis, by pressure indirectly on the nerve trunks in the posterior triangle of the neck, I advised the braces to be removed, the trousers to be fixed by an abdominal belt, and the right arm to be placed in a sling, so arranged that the right elbow was supported and slightly raised—dragging of the weight of the arm on the nerve roots in the posterior triangle and pressure of the clavicle on these roots being thus prevented. Antipyrin gr. x three times a day was given. The pain very rapidly diminished, and in two days had entirely ceased. Four years later the patient was in good health; he had had no return of symptoms.

CASE III.

An elderly female. The symptoms followed a sudden heavy blow on the left shoulder in a street crowd; the shoulder was pushed backwards. The nerve roots in the left posterior triangle of the neck were tender, and the symptoms of brachial neuritis just described were present. The arm was placed in a sling, as in Case II, and antipyrin given. Recovery ensued in a few days, and there had been no return of symptoms ten years later.

CASE IV.

A middle-aged man presented the symptoms after a fall on the right shoulder; the nerve roots in the right posterior triangle of the neck were tender. All the other symptoms of brachial neuritis were present.

CASE V.

A middle-aged man, with symptoms of brachial neuritis in left arm, stated that the pain had commenced one evening (many weeks previously) just after he had carried a very heavy roll of carpet on the left shoulder and left side of the neck. Probably this had compressed the nerve roots in the posterior triangle of the neck, and caused the neuritis.

CASE VI.

A young man had symptoms of brachial neuritis in the right arm. He had long suffered also from various slight symptoms of neurasthenia. The pain in the arm was especially severe after walking for long distances with the right arm hanging down by the side. A strap over the right shoulder was tight. This was slackened and put off when not absolutely necessary, and the patient was advised to keep the arm in a sling as described. Recovery was rapid.

CASE VII.

A soldier, sent home from France on account of trench fever, had suffered during that illness from pain in both arms and legs. He had to discontinue the use of braces on account of pain caused by pressure of braces on the shoulders.

He was discharged from the army, improved, and returned to his work, in which he had to turn the handle of a machine with his right hand about twenty times a day for about fifteen minutes each time (thus using the right hand in turning the machine altogether for five hours daily). The work was a very heavy physical strain. In a short time (less than a month) he began to suffer from pain in the right arm which increased until he was unable to work further. All the symptoms of brachial neuritis developed.

CASE VIII.

A naval officer whilst stationed at a port on the south coast was suddenly called from his bed one night to answer a telephone. He had not time to dress, and whilst standing at the

telephone the left shoulder and left side of neck were exposed to a strong draught of cold air from an open window for a considerable time. He returned to bed and slept, but on awaking next morning found the left arm very painful. In a few days the pain was so severe he had to discontinue his duties. When I saw him at this time he presented all the symptoms of brachial neuritis just described. The pain continued for a few weeks and was often so severe as to prevent sleep. Then he gradually improved and recovered.

CASE IX.

A man slept on very damp ground, his left arm being in contact with the ground. The symptoms of brachial neuritis followed in the left arm.

CASE X.

A woman, aged 52, put on a very damp jacket and went out in the cold; within two hours pain and symptoms of brachial neuritis began in both arms and continued for many months. There were no signs of organic disease. She recovered.

In diabetes mellitus and in chronic alcoholism brachial neuritis, with symptoms similar to those just described, is occasionally observed. I have seen a number of such cases. Gowers and others consider that gout also is a common cause of the disease.

CASE XI.

A woman, aged 45, had suffered from mild diabetes mellitus for four years. Without any apparent cause, beyond the diabetic condition, aching in the limbs became troublesome. In a short time the pain in the legs and right arm ceased to be troublesome. But the pain in the left arm became very severe, so severe that she was unable to sleep. It was most severe between the elbow and shoulder; it was diffuse, not limited to distribution of any nerve or nerve root. There was great tenderness on pressure at this part. There was no anaesthesia, paresis, or atrophy, and the reflexes were normal. The nerve roots of the brachial plexus in the left posterior triangle of the neck were more tender on pressure than those in the right posterior triangle. The other symptoms of brachial neuritis were noted. The arm was placed in a sling as already described, and antipyrin gr. x three times a day was prescribed. Rapid recovery ensued in a few days, and ten months later there had been no return of pain.

Prognosis.

Most cases I have seen recovered completely. In rare cases the symptoms have persisted, with periods of intermission and relapses, for months. Primary brachial neuritis is not followed by organic disease of the nervous system or thorax.

Diagnosis.

The description just given refers to "*primary* brachial neuritis"; but symptoms, which at first are somewhat similar, occur in cases of pressure on the brachial plexus by tumour in the thorax or neck, or by aneurysm, and in cases of meningeal spinal tumours and other organic affections. Later in such cases objective nervous or thoracic symptoms develop, which indicate clearly that the case is not one of primary brachial neuritis.

Considerable care is therefore needed in the diagnosis. A very thorough examination is necessary, and the diagnosis of primary brachial neuritis should only be made when all signs of organic disease of the nervous system, of aneurysm, or intrathoracic growth, and of other organic disease of heart, lungs, spine, or neck, are lacking, and when the symptoms are subjective. Anaesthesia, paralysis, changes in the reflexes, would all exclude the primary brachial neuritis I am considering.

As already stated, cases of primary brachial neuritis usually terminate in recovery, and clinically the diagnosis cannot be regarded as quite certain until recovery has occurred. Nevertheless, after careful examination, and exclusion of signs of organic disease, the diagnosis of primary brachial neuritis may often be given as strongly probable, and this opinion is often verified by the recovery of the patient. The longer the disease persists the more probable is it that the neuritis is secondary to some organic lesion.

In the diagnosis from neuralgia the character of the pain is helpful. In brachial neuritis the pain is less completely intermittent than is that of neuralgia, and the nerve roots in the posterior triangle are more tender on slight pressure at the early period.

Symptoms very similar to those of brachial neuritis may occur at the early stage of a spinal meningeal growth, but in such cases they do not clear up, and in course of time paralytic symptoms and other indications of organic disease develop.

In a case under my care (which proved to be a gumma of the cervical dura mater) the first symptoms were similar to those of brachial neuritis. They persisted in spite of all treatment (including antispecific treatment) for over twelve months, and no other symptoms of affection of the nervous system could be detected. Then slight paresis developed in the affected arm and was rapidly followed by paralysis of both legs, both arms, and of the bladder and intercostal muscles, and by anaesthesia up to the second intercostal space.

In this case, at first, the symptoms were very similar to those of brachial neuritis, but the persistence of the pain without any improvement rendered primary brachial neuritis very improbable. The case shows the necessity for keeping a careful outlook for the development of signs of organic disease of the spinal cord in all cases of brachial neuritis.

The diagnosis from surgical affections in the region of the shoulder (fracture, partial or sub-dislocation, sprain, laceration of ligaments, arthritis, etc.) has also to be considered. Signs of these conditions should be searched for, if we have a history of injury; and in difficult cases *x*-ray examination may be helpful. Primary brachial neuritis can be excluded if the pain is felt only on movement, or if we find that on passive movements the scapula moves along with the humerus, if partial ankylosis or adhesions have formed at the shoulder-joint, or if we find signs of fluid in the joint.

A "cervical rib" may cause pain in the arm which may be at first regarded as brachial neuritis. But in cervical rib the pain is often chiefly in the distribution of the first dorsal nerve root in the arm, often sensation is diminished in this area, and the small muscles of the hand become wasted. The existence of a cervical rib is revealed by *x*-ray examination.

As in all cases of pain in various parts without objective signs, hysteria and malingering might present the greatest difficulty. In brachial neuritis often we can only exclude hysteria or malingering on general grounds. In nearly all of my cases of brachial neuritis I have had no hesitation in excluding hysteria or malingering. We have usually no indication of hysteria, the statements as to the pain are definite, and we are unable to detect any tendency to exaggerate. The onset is usually rapid. The patient is evidently most anxious to obtain relief, he is often unable to sleep on account of the pain. If we move the limb slightly when the patient's attention is directed elsewhere we find we are unable to do so without increasing the pain. The recovery is usually definite and no further trouble occurs, at least not for a long period, when a second attack may occur. We find no object for malingering, or a history of anything pointing to hysteria or malingering.

But the diagnosis can only be based on general considerations. We cannot put on paper these considerations definitely. We have to decide from such general considerations whether the pain be genuine or not, in just the same way as in other cases of neuralgia or pain without definite physical signs; usually from such general considerations we have no hesitation in brachial neuritis in deciding that the patient is suffering from severe pain. But if we have any indications of hysteria or malingering, the diagnosis may then be very difficult or impossible at first.

Rheumatic affections of the shoulder-joint should be carefully excluded, and the patient examined for swelling of the joint, grating on movement of the joint, or ankylosis, partial or complete, as detected by passive movements at the shoulder. These would be points against primary brachial neuritis, though joint affections may be associated with neuritis. In the rheumatic affections of the shoulder, though the pain may extend down the arm, it is usually greatest at the joint. Other joints are often affected afterwards, or have been affected previously, and we have often a history of various rheumatic affections.

Treatment.

A point of first importance is to relieve, by the position of the arm, pressure on the nerve trunks of the brachial plexus in the posterior triangle of the neck. The weight of the arm should not drag on the nerve trunks and the posterior surface of the clavicle should not press upon them at the lower part of the posterior triangle, nor should any strap or brace press on the posterior triangle. For many years I have treated cases of brachial neuritis by placing the affected arm in a sling. The sling should pass over the shoulder of the normal arm, and it should be so

arranged that it passes under the elbow of the affected arm and slightly raises it. The shoulder and the clavicle are thus slightly raised, and pressure on the nerve roots at the lower part of the posterior triangle of the neck (near the first rib) is prevented; also the weight of the arm is supported and dragging on these nerve trunks prevented. These I regard as points of much importance in the treatment of many cases. Very often the sling is of great service; in other cases it fails; but it is always worth trying, especially if we have a history of the local pressure causes already mentioned. The sling also keeps the arm at rest. All tight braces or shoulder straps should be removed at once, and a waist belt used in place of braces. If the patient is on military service all tight shoulder straps should be slackened or discontinued altogether when possible.

The arm should not be allowed to hang by the side. If the arm cannot well be kept all day in a sling, the hand should be placed in the pocket when the sling is not used, or the arm may be crossed over the front of the chest, the elbow being bent at a right angle, and the hand pushed under the edge of the coat just above one of the buttons. When the pain is very severe and the patient confined to bed, the sling should still be used. The arm may be also supported by pillows placed under the elbow, so arranged as to support the weight of the arm, or to raise the shoulder slightly; and the forearm should be crossed over the chest. In this way pressure by the clavicle on the nerve roots in the posterior triangle of the neck is avoided or diminished. When the neuritis is due to exposure of the neck and shoulders to cold and draught or damp, or when due to diabetes or toxic conditions, the sling may not be of much service, but in some of these cases also it is helpful.

The drugs which I have usually given, and which may be of service, are pyramidon, antipyrin, aspirin. General and dietetic treatment for diabetes or gout will be desirable when the patient suffers also from these diseases. It is always well to cut off alcohol.

Locally, liniment of belladonna, the fluid prepared by rubbing together equal parts of chloral and camphor in a mortar, or cocaine ointment, may be of some service. In very severe cases, opium, morphine, or codeia internally may be required, and, in exceptional cases, hypodermic injections of morphine. This was necessary in only one of my cases. Galvanism and many other methods of treatment have been employed.

Most of my cases, but not all, recovered promptly or improved markedly by the use of a sling, with pyramidon or antipyrin given internally.

FEBRILE URTICARIA.

BY

R. D. LAWRENCE, M.A., M.B., CH.B.ABERD.,

CAPTAIN R.A.M.C.(S.R.).

Two unusual cases of severe urticaria occurred in the British Station Hospital, Nowshera, N.W.P. India, within a week of each other, and were almost identical in the type and duration of the disease. Both were characterized by a severe and generalized urticarial eruption, five days' pyrexia, and the absence of any of the usual exciting causes of urticaria or inherent tendency to the disease.

CASE I.

A soldier, under treatment for right empyema by drainage of the pleural cavity. The discharge had practically ceased, and his temperature had been normal for a fortnight, when one morning he complained of itching of the left buttock, where several typical urticarial wheals were to be seen. Next day the wheals appeared on his forehead, and the lips were so swollen that he could hardly open his mouth. On the third day the eruption was generalized, and practically the whole body was covered with patches of elevated wheals surrounded by an area of congestion less raised than the wheals themselves. The ankles and the dorsa of the feet were particularly red and swollen, and here the condition was more of the nature of angioneurotic oedema than of discrete wheals, and the sensation one of tenseness and pain more than of itch. Pyrexia began on the second day, and reached its maximum when the eruption was worst. The pyrexia and the urticaria declined and disappeared *pari passu*.

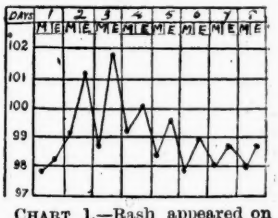

CHART 1.—Rash appeared on the first day, was at its worst on the third day, and disappeared on the sixth.

Neither dietetic changes, drugs, vaccines, insects, nor any of the usual exciting causes could be traced in this case. No other symptoms nor signs of disease were present, except the almost cured empyema. He had never had an attack of urticaria before and felt quite well as soon as the eruption passed off. He was treated at first with calomel and salines and afterwards with cooling applications, sedatives, and hypnotics, but obtained little or no relief from the intolerable itch.

CASE II.

A medical officer, working in the same hospital, but not in attendance on Case I, was in perfect health when he noticed one morning, five days later, a small white wheal on his forehead, which rapidly grew to the size of a hen's egg; he also felt itching on the parts of his back and shoulders exposed to the friction of the clothing. By next day the eruption had broken out in patches over most of his body, but the size of the swellings and the intensity of the itch in any one part was not always the same. At one time his eyes were closed; at another his cheeks and lips were swollen to twice their normal size, or his hands and fingers were so tense and swollen that he could not close them. In the parts of the body where the skin is loose, the wheals varied in size from 2 to 3 centimetres. They appeared first as white wheals, mostly oval or roughly circular, but soon became deep red in colour and were surrounded by an erythematous area of congestion which was intensely sensitive and irritable. In the fingers, hands, feet, and scalp, where there is little loose skin, distinct wheals were not seen, but the whole area was tense, swollen, and of a rosy colour. On the fourth day of the eruption the temperature was 103° F. and the urticaria and swelling at its worst. After that it rapidly declined (see temperature chart).

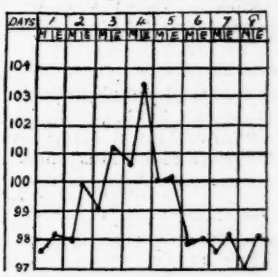

CHART 2.—Rash appeared on the first day, was at its worst on the fourth day, and disappeared on the sixth.

The mucous membranes were not affected, nor was there any sign nor symptom of disease elsewhere. The pulse throughout was of a rate commensurate with the temperature. It was easily compressible and bounding, but not dicrotic. The urine was normal; there was no jaundice and the blood count showed a slight polymorphocytosis of 77 per cent., but no eosinophilia.

Treatment was commenced with purgatives. Calcium lactate was given in full doses and adrenalin chloride hypodermically. Cool alkaline baths and sponging, ¼ grain doses of morphine, full doses of bromides, were all tried to allay the intolerable itch, but with no success. The patient was driven to walking about in pyjamas in the cold night air, and found that the best way to allay the itching was to keep himself almost shivering with cold.

Again in this case no exciting cause could be found. He had never suffered from such a condition before, but had noticed in the last six months one or two sudden transient attacks of oedema of the nasal mucous membrane with complete stoppage of nasal respiration. Apart from this he had never had any sign of vasomotor weakness or instability.

The symptoms in the two cases were practically identical, and were characterized by five days' pyrexia, by a diffuse eruption partly resembling urticaria and partly angioneurotic oedema, and by intolerable itch. They both occurred in the same hospital within a week of each other, but such cases have never been reported before in this district of India, as far as I know. None of the known causes of urticaria were present, and the questions arise whether it was not more than coincidence that these two uncommon cases appeared so close together in time and place, and whether there might not be some unknown specific infective agent to account for them both.

THE Harvard Medical School has recently received two bequests. One is an anonymous gift of £10,000 for the establishment of the James Melvin Fund for Tropical Medicine; the income is to be applied for purposes of research in preventive medicine. The other is a residuary legacy from Horace Fletcher, the apostle of "Fletcherism," and the income is to be used to "foster knowledge of healthful nutrition."

INTRAVENOUS INJECTIONS OF ANTIMONIUM TARTARATUM IN KALA-AZAR.*

BY

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In the *Transactions* of the Society of Tropical Medicine and Hygiene for December, 1916 (vol. x, No. 2, pp. 37–42), I briefly described the history of the introduction of intravenous injections of tartar emetic in trypanosomiasis, leishmaniasis, and other tropical diseases. It is unnecessary, therefore, to enter upon this again, apart from saying that the beneficial effects of the drug have been well proved since that date, especially in leishmaniasis.

The case I now report is of special interest, first, because the infection was acquired almost certainly in Baghdad, where this disease does not apparently exist indigenously; secondly, because it is the first case I know of which has been treated in England by this method; and, thirdly, because an unfortunate attack of influenza, by carrying the patient off just at the termination of his treatment, gave the opportunity of definitely determining whether or not a complete sterilization of his *Leishmania donovani* had taken place.

History of the Case.

The patient was born in England, and was never out of it till 1916. Joining the army in the end of that year, he served a month in France and then was transferred to India. He arrived there in March, 1917, and was stationed first at Bombay then at Karachi. While there he went for a trip to Bangalore and back, but, apart from that, had visited no other parts of India. After this he went to Mesopotamia, arriving in Baghdad on July 30th, 1917, where he stayed until invalided in June, 1918, to Bombay and then home to England.

Previous Illnesses.—Influenzal cold, 1913; inflammation of antrum and otitis after it; no pus; never venereal disease.

Present Illness.—The patient, as just stated, arrived in Baghdad on July 30th, 1917. He enjoyed good health until the following March, when, on the 25th of that month, he felt feverish and took his temperature, which was found to be raised. After this night sweats began to develop, so on April 19th, 1918, he went into hospital. His temperature was then found to be 102° F.; spleen enlarged. Blood films: no malaria or relapsing fever; three blood cultures for the enterica group all negative. No undulant fever reaction. The illness went on, and quinine had no effect upon the temperature. Leucocytes then 10,000. At this time *Entamoeba histolytica* cysts and *Lamblia intestinalis* cysts were found in the stools. For this he had two courses of emetine, one by hypodermic injection, the other a combined one of emetine hydrochloride hypodermically and emetine bismuth iodide by the mouth. Two negative examinations for *histolytica* cysts were recorded after this. At the end of May, 1918, the liver was punctured but nothing was found. As the pyrexia and other symptoms continued the patient was sent to Basra on June 16th, 1918, then to Bombay, and finally, on August 29th, 1918, home to England.

On arrival he was admitted into St. Thomas's Hospital, under the care of Captain A. E. Russell, R.A.M.C., on September 29th, 1918. I saw him with Captain Russell on October 16th, and on examining smears of spleen juice that had been taken by splenic puncture found *Leishmania donovani* parasites. The patient's blood count at that time was as follows: Red cells 3,300,000; white cells 1,500; haemoglobin 60 per cent. He was running a remittent temperature, had a large spleen and all the other clinical signs were very typical of kala-azar.

Tartar emetic, intravenously, in small doses, was then begun. I saw him again on November 10th, and found that the temperature was still keeping high, and the patient was depressed and looking ill. On November 19th the patient was transferred to the Albert Dock Hospital and passed under my charge. I at once pressed the antimony, and after the first big dose of 2 grains the temperature fell for good and never rose again, with the exception of a rigor, once or twice, after some of the injections. (I am greatly indebted to Captain Russell for allowing me to use his notes and for giving me permission to publish the early part of the case.)

The following table gives the details of the treatment at a glance.

Table showing Progress of Case and Drug Employed.

Date.	Antimonium Tartaratum.	Date.	Antimonium Tartaratum.
1918.		1918.	
Oct. 18	gr. ¼ intravenously	Dec. 23	gr. 2½ intravenously
,, 22	gr. ½ ,,	,, 27	gr. 2½ ,,
,, 25	gr. ½ ,,	,, 30	gr. 2¾ ,,
,, 29	gr. 1 ,,		
Nov. 1	gr. 1 ,,	1919.	
,, 5	gr. 1 ,,	Jan. 2	gr. 2¾ ,,
,, 12	gr. 1½ ,,	,, 6	gr. 2¾ ,,
,, 15	gr. 1½ ,,	,, 9	gr. 2½ ,,
,, 21	gr. 2 ,,	,, 13	gr. 2½ ,,
,, 25	gr. 2 ,,	,, 16	gr. 2½ ,,
,, 28	gr. 2 ,,	,, 20	gr. 2½ ,,
Dec. 2	gr. 2 ,,	,, 23	gr. 2½ ,,
,, 5	gr. 2 ,,	,, 27	gr. 2½ ,,
,, 9	gr. 2¼ ,,	,, 30	gr. 2½ ,,
,, 12	gr. 2½ ,,	Feb. 3	gr. 2½ ,,
,, 16	gr. 2½ ,,	,, 6	gr. 2½ ,,
,, 19	gr. 2½ ,,	,, 10	gr. 2½ ,,

Notes to Table.

November 12th, 1918. Blood count: Red cells 3,900,000; white cells 1,480; haemoglobin 85 per cent. Down to this date at St. Thomas's Hospital.

November 19th. Transferred to Albert Dock Hospital, London School of Tropical Medicine.

December 5th. Blood count: Red cells 4,450,000; white cells 4,500; haemoglobin 90 per cent. The temperature fell to normal after the first 2 gr. dose and remained so.

December 27th. Gaining weight; spleen gone down very much.

January 6th, 1919. White cells 4,800. Spleen still palpable, though much reduced in size.

January 23rd. No sign of disease left now.

January 30th. White cells 4,000. Up and about; spleen just palpable under costal margin.

February 13th. Influenza.

February 17th. Died of influenzal pneumonia at 11.30 p.m.

Amount of antimony given: At St. Thomas's 7¼ gr.; at Albert Dock Hospital 57½ gr.; Total 64¾ gr.

By February 10th, 1919, just before the patient developed influenza, he was apparently in perfect health, and all signs of the disease had disappeared. He was up and about, eating well, going out and to all intents and purposes clinically cured.

The attack of influenza was severe. He felt tired on the night of February 12th. By next morning he had developed a temperature of 103°, but no lung symptoms. On the 14th, 15th, and 16th the temperature was still high, but the strength was well maintained. On the morning of the 17th a patch of pleurisy developed on the right side, just above the liver, and by the afternoon definite pneumonia had set in. This spread with alarming rapidity, and the patient sank and died at 11.30 p.m. from the severe toxaemia.

An autopsy was allowed and this was carried out on February 19th, at 10 a.m., thirty-four and a half hours after death.

Autopsy Notes.

External Appearances.—Post-mortem staining already well advanced, black liquid exuding from nose and mouth.

Thorax.—No fluid in pericardium, no pericarditis.

Heart: Contained *ante-mortem* clot in right ventricle. Organ ordinary size; no lesions of valves; muscle fairly hard, not specially friable; shows cloudy swelling. Aorta, no atheroma.

Lungs and pleural cavities: A few ounces of blood-stained fluid in right pleural cavity, none in left; no old pleural adhesions. Right lung: Recent pleurisy with lymph over lower lobe. Whole of this lobe solid with confluent bronchopneumonic patches, also oedematous. Upper and middle lobes congested, no pneumonia. Left lung: Commencing bronchopneumonia in lower lobe; congestion in upper. No old tubercle in either lungs.

Abdomen.—No peritonitis.

Liver: Weight 6 lb. 5 oz. No perihepatitis. Organ in a state of what appears to be an early multilobular cirrhosis, markedly fatty also; yellow colour; not much blood in organ.

Spleen: Weight 1 lb. 9 oz.; enlargement chiefly upwards. Firm to the feel; pulp firm; darkish colour, no perisplenitis.

Kidneys: Cloudy swelling and fatty changes; no nephritis. (Albumin was never present in the urine during life.)

Stomach: Contained some black grumous fluid; mucous membrane, patchy congestion at places.

Small intestine: Nothing definite to note.

Large intestine: A series of small pigmented scars in caecum, chiefly round opening of appendix; look like healed ulcers, very small—2–4 mm. only across. (Were those amoebic ulcers which gave rise to the *Entamoeba histolytica* cysts found in the faeces in Baghdad?) No large ulcers in colon. No sign of kala-azar ones. Some small deeply congested areas near rectum.

Mesenteric glands congested and slightly enlarged.

Groin glands palpable, slightly enlarged.

Bone marrow very dry, normal colour.

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Smears were taken from the liver, spleen, bone marrow, mesenteric lymph glands, inguinal lymph glands, kidneys, lungs, and heart. Though a very exhaustive search was made in the many smears taken from these different organs, nothing resembling *Leishmania donovani* was seen.

In sections of the same organs a similar absence of parasites was noted, this proving definitely that the specific parasite had really disappeared. Sometimes an infection with *L. donovani* is cleared out after any severe septic change, and as the patient had suffered from a severe toxaemia from his influenzal pneumonia just before death, the possibility of this having something to do with the disappearance of the parasites, though unlikely, must not, of course, be forgotten. From the disappearance of all clinical signs early in the treatment after the large doses were employed, it may be surmised that the sterilization took place about that time or a little later, and at the time the influenza developed there is little, if any, doubt that he was quite free from all infection.

The autopsy in this case, in addition to yielding valuable information as to the destruction of the specific parasite of kala-azar, is also of importance in enabling one to determine what effect, if any, large doses of antimony intravenously have upon the different viscera. Can one produce a state of chronic poisoning by too large and too prolonged doses?

Breinl and Priestley[1] report a case of poisoning in an aboriginal Australian, 22 years of age, suffering from ulcerating granuloma.

Treatment in this case was begun with doses of 0.08 gram of tartar emetic in normal saline, administered intravenously, increasing after two days to 0.1 gram, and after a further two days to 0.12 gram; injections were given on alternate days, until altogether 1.74 grams had been given.

The day following the last injection the patient complained of slight nausea and vomiting and looked ill. On the third day after he became delirious, had a rise of temperature, and vomited dark blood. Death took place sixty-four hours after the final injection. Diarrhoea did not occur, nor was blood and albumin noted in the urine.

At the autopsy the liver was found to be of normal size; microscopically a widespread fatty degeneration was present, with here and there acute focal necroses. The kidneys showed lesions corresponding to an acute interstitial nephritis with calcareous deposits in the medullary substance. The heart muscle showed slight fatty changes; the stomach was oedematous and congested, but did not show any ulceration. No chemical analysis was made.

Analysing this case, the kidneys would appear to have been at fault, and the excretion of the drug was probably hindered on account of this. The total antimony given was not large, only 1.74 grams. The symptoms were those of an acute rather than a chronic poisoning.

While engaged in writing up the details and consulting the literature of my case an opportunity of studying a similar case, I note, has occurred to Archibald and Innes in Egypt.[2]

These observers report a case of bilharziosis treated by intravenous injections of tartar emetic, death taking place at the end of a course of 33 grains from influenzal pneumonia. In this case the liver weighed 3½ lb., and was of a pale yellow colour; microscopically the liver cells were granular and vacuolated, and areas of necrosis were seen (there is no mention of any cirrhosis being present). The kidneys showed cloudy swelling and fatty degeneration and infiltration.

In discussing the question of poisonous effects of antimony the authors cite Knowles as recording 5 deaths out of 20 cases of kala-azar treated by this method. No details are given, however, as to whether these were due directly to the antimony or not. Archibald and Innes's case evidently died, like my case, from influenzal pneumonia, and the question of whether the antimony had anything to do with the fatal issue is *sub judice*.

In the case described above it will be remembered that the liver showed a well marked cirrhosis, was double the normal size (6 lb. 5 oz.), and to the naked eye was yellow and distinctly fatty. Was this condition, then, due to the kala-azar (cirrhosis of the liver has been described in this disease), or was the fatty change produced by the toxaemia of the influenzal pneumonia, or was the cirrhosis and fatty change due to the large doses of antimony given from time to time?

In order to determine this, careful microscopic examinations of sections of the liver were made and studied by Dr. Newham, myself, and Major Foulerton, R.A.M.C., who kindly took some of the tissue for analysis. These sections show considerable fatty infiltration of the parenchymatous cells of the liver, and also considerable fibrous changes of a somewhat irregular type. As Major Foulerton is now working at the poisonous effects of trinitrotoluene, tetrachlorethane, and the salvarsan group on the liver and other viscera, I have handed this aspect of the case over to him and he will report upon the matter in detail later.

Apart from the liver and kidneys, the other viscera showed no changes of importance. The stomach was perhaps slightly congested; it showed no ulceration. The small intestines showed no appreciable change, while all that was visible in the large intestine were some small pigmented spots suggestive of healed ulcers around the ileo-caecal valve and a few congested areas near the rectum. The former may have been old amoebic ulcers in the early stage, and may have been the source of the *E. histolytica* infection detected and successfully treated in Baghdad. Apart from these the large gut showed no sign of any visible lesions. No *E. histolytica* (free or cystic forms) were found in the stools when the patient was under my care. He had a moderate *E. coli* infection, and on one occasion four coccidia (Isospora) were found in the stool. No trace of where these came from could be detected on a close examination of the gut, even with a hand lens.

It is thus evident that antimony given in large doses intravenously over long periods of time may produce fatty changes in the viscera, and that in other cases toxic symptoms of an acute nature may appear. Recently Christopherson[3] has drawn attention to the fact that tachycardia has been met with in cases in Egypt undergoing antimony treatment for bilharzial disease. I have a case of that disease under my care now, and several times after a 2 grain intravenous injection of tartar emetic the patient has complained of a feeling of constriction over the cardiac area. As he has also developed some indigestion, I have stopped further injections for the present.

As regards kala-azar, what one requires is a test to determine when the leishmanial parasites have disappeared. Whenever one can be certain of this, then the injections should cease, as they can then do no further good, while, on the other hand, they may do considerable harm.

Rogers relies on the absence of fever for a considerable time, steady gain in weight, and diminution in the size of the spleen as indicating recovery and cure, and until some better test can be evolved we may, more or less, accept this.

Kala-azar is a deadly disease, and it is justifiable to push the antimony even to a dangerous extent. The fatty changes that have been described in the few cases that have come to autopsy might quite well have disappeared if the patients had not been carried off by intercurrent disease, and it is very likely that all cases show these changes to a certain extent but recover from them when the drug is stopped. The degree of fatty change in the liver is much more extreme in ankylostomiasis, yet all these cases do not die, but apparently recover perfectly, once the parasites have been removed.

As regards bilharziosis, antimony intravenously is now on trial, and reports so far would seem to indicate that it is of value. Here again a test is required to enable one to say if the infection has disappeared or not, and so to obviate the danger of going on too long with the antimony. Archibald and Innes have suggested that the disappearance of the eosinophilia might be used for such a purpose. It remains to be seen whether this will disappear at once on the death of the adult worms. In the case of bilharzial disease mentioned above,[4] which I have been treating with antimony injections, all blood and ova have disappeared now for some time, but the eosinophilia persists as high as when the patient was first seen. Possibly the infection is only dormant, and may spring to life again on the cessation of treatment.

Conclusions.

1. Antimonium tartaratum is evidently a specific against *Leishmania donovani*, and in the case under discussion sterilized the patient of his infection.

2. Antimony in large doses, given over prolonged periods of time, produces fatty changes in the liver and kidneys, which may seriously damage the resisting powers of the

patient, and may even cause death (Breinl and Priestley's case).

3. Antimony should not be given for longer periods than necessary, and therefore it is important that some definite test should be evolved which will indicate when the infection of kala-azar has disappeared and the patient is cured.

4. If antimony is finally proved to destroy the *Schistosoma haematobium*, then a similar test to determine when this destruction has taken place is required.

5. In all cases where antimonium tartaratum is given intravenously the patient should be confined to bed on the day of the injection and kept there till the day after, and should be carefully watched throughout the course, any indications of gastric or constitutional disturbances at once contraindicating further injections.

6. Not more than two injections a week should be given, and the salt should not be given in too concentrated a form.

REFERENCES.

[1] Breinl and Priestley: Notes on a case of Antimony Poisoning, *Journ. of Trop. Med. and Hyg.*, February 15th, 1918, vol. xxi, pp. 38-39.
[2] Archibald and Innes: *Journ. of Trop. Med. and Hyg.*, April 1st, 1919.
[3] BRITISH MEDICAL JOURNAL, April 19th, 1919. [4] *Journ. of Trop. Med. and Hyg.*, May 15th, 1919.

TENDON TRANSPLANTATION IN DROP-WRIST DUE TO NERVOUS INJURY.

BY

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WHILE realizing the great importance of resorting when possible to nerve suture or grafting in cases of drop-wrist, it is not my intention to decry such "ideal" treatment, but to bring forward arguments in favour of a more extensive appreciation of the advantages of tendon transplantation and anastomosis under conditions where the performance of suture, etc., is not possible, or even in some cases as an adjunct to this.

In the majority of cases in which the musculo-spiral nerve has been severed as a result of gunshot wounds, the humerus has been fractured, often suppuration has supervened, and secondary nerve suture cannot be carried out for some months, even under the most favourable circumstances. In spite of vigorous massage, movements, and electrical treatment, the extensor muscles waste, and the chances of a hand and fingers which shall function as formerly is indeed small.

Most men would rather have a useful hand now than an extremely problematical perfect hand in two or three years' time. Nor does the operation of tendon transplantation performed relatively early preclude or prejudice the later performance of nerve suture.

Nor does it appear unjustifiable to perform tendon transplantation about the wrist at the same time as nerve suture of the musculo-spiral in the arm, for, by the active movements at the wrist and finger joints which follow the completion of the tendon transplantation, troublesome adhesions in the small joints of the fingers and wrist are prevented, and the forearm extensor musculature is kept in better condition for the reception of the newly formed neurons than by the most skilled massage. The contention that if tendon transplantation is performed in addition to nerve suture it will in some cases become unnecessary later is more than balanced by the fact that, properly performed, it can do no harm after nerve regeneration has taken place, and the restoration of function to the paralysed muscles will in all cases be expedited.

The theory and practice of tendon transplantation stands or falls on its results. The questions to be answered are: Will the hand be benefited by transplantation? Will it prohibit or prejudice later nerve suture should this become possible? Will the residual group of robbed muscles be so weakened as to diminish their utility to vanishing point? In my opinion these questions can be satisfactorily answered, and a verdict given in favour of tendon transplantation when the following indications are present:

1. Severance with large loss of substance of the musculo-spiral nerve.

2. Severance of the musculo-spiral nerve with much bony injury and prolonged suppuration.

3. In cases where very rapid and complete wasting of extensor muscles has supervened.

4. In all cases of division of the posterior interosseus nerve.

The indication of the last group is based on the fact that the nerve is exceedingly small, runs a very circuitous course, is difficult to find, and the fact that the carpal extensors, extensor carpi radialis longior and ulnaris, are nearly always spared. The extensor carpi radialis longior and supinator longus being supplied by the musculo-spiral before its division into radial and posterior interosseus can be utilized as an extensor of the thumb and fingers.

The commonest type of posterior interosseus paralysis is that due to severance of the nerve just below the mid-point of the forearm, resulting in paralysis of the extensor ossis metacarpi pollicis, extensor brevis, and longus pollicis, and the whole or part of the common extensors of the fingers; more commonly this is partial, and the power of one or two fingers survives. These cases do exceedingly well with tendon anastomosis. The supinator longus, detached at its insertion, can be anastomosed with the extensor ossis metacarpi pollicis, and the extensor carpi radialis longior with the common digital extensors, or the extensor longus pollicis if the finger extensors are spared. In these (partial) cases it will be seen that whereas tendon anastomosis materially improves the hand within a few weeks, it does not, *a priori*, prejudice the further performance of posterior interosseus suture, were one skilful or rash enough to attempt it later.

The complete drop-wrist from musculo-spiral paralysis presents a more serious and difficult problem. This disabling condition is primarily due to the hyperflexion at the wrist-joint. Even in the normal hand the flexor muscles of the fingers cannot exert their maximum power unless there is a moderate degree of extension at the wrist-joint. When the normal hand is voluntarily placed in the attitude adopted by the drop-wrist of musculo-spiral paralysis, it is found that the fingers cannot be clenched—indeed, they cannot be fully flexed on the palm. Much more marked, then, is the condition in the flaccid paralysis of drop-wrist. In other words, the drop-wrist (or normal hand in this position) cannot make a "fist."

It behoves us, therefore, first to correct this hyperflexion of the wrist-joint and allow full play to the digital flexors. A patient with a wrist ankylosed in line with the forearm, with free finger movements, is in a better condition to make the fullest use of his fingers than one with a drop-wrist. I do not think this point is sufficiently appreciated by English surgeons. Continental surgeons have, however, recognized this, and carried out fixation of the wrist-joint by means of an artificial ligament manufactured out of fascia lata. The drop-wrist has not been cured—that is, return of power of extension—but a permanently slightly extended wrist has resulted, allowing full play to the flexors of fingers and thumb, which later can be abducted by its shorter abductor.

In these cases a fascial graft can be manufactured to act as a ligament permanently extending the wrist. It is attached to the third or fourth metacarpal distally and to the radius or ulna proximally, slightly nearer the upper extremity than the lower. If this is done, the flexor carpi radialis can be utilized for anastomosis with the extensor communis digitorum by passing its tendon through an aperture in the interosseus membrane, or, better still, the pronator quadratus, as there is less likelihood of the formation of adhesions with the tendon passing through muscle than interosseus membrane. The palmaris longus can easily be anastomosed with the extensor ossis metacarpi pollicis, and a very fair amount of abduction of the thumb results.

The method of transplanting the flexor carpi radialis and ulnaris to the insertions of the extensor carpi radialis longior and extensor carpi ulnaris works well, but leaves extensors of the fingers and those of the thumb without suitable "tendon donors," unless the final carpal flexor palmaris longus (not always present) is utilized, or a suture between the insertion of the pronator radii teres and the belly of the extensor communis digitorum effected, a not very satisfactory plan on *a priori* grounds as the resulting muscle pulls round a "corner."

The supporters of this method claim that after suitable education the flexor carpi radialis and ulnaris function as extensors of wrist or fingers.

I am of opinion that it is not so, and that they never act as true extensors, in that they become independent of flexor impulses, and are dissociated from the rest of the muscles supplied by the median and ulnar nerves. True extension consists of a "pressor" impulse along the extensor tract, with inhibition of the flexor group of muscles. But, inasmuch as the flexor carpi radialis and ulnaris are powerful muscles and the flexors of the carpus have been diminished by their removal, they fix or slightly extend the carpus when a flexor impulse is transmitted via the median and ulnar nerves to the flexor musculature of the forearm, no matter what the ultimate insertion of its individual muscles may be (in this case the extensor surface of the metacarpus for two of them). It is this slight extension and fixation of the wrist which allows full play to the flexors of the fingers and thumb. Shortening of the tendons of the extensor carpi radialis longior and brevior acts in the same way, but is apt to stretch after a time, and is not so satisfactory as the fascial ligament mentioned above.

When the essential fact is fully realized that it is the acute flexion of the wrist which is so disabling in musculospiral paralysis, the cases of this complaint will rapidly become fewer. There should be no excuse for a drop-wrist to-day. If the wrist be fixed in slight extension by any of the above methods, the "uselessness" of the hand will largely disappear, even if nothing more is done to promote active extension of the fingers. The fingers, indeed, will largely settle this question for themselves, and will, to a certain extent, become "passively" extended by the "rebound" on the inhibition of their flexor impulse.

Notes on the Operation.

Asepsis.—This is of course essential; a tendon anastomosis which undergoes the present day epidemic of sepsis will not be a success.

Correct Alignment of the Anastomosed Tendons.—It is necessary to lay stress on the absolute necessity of the "donating" tendon being in a straight line from the belly of the muscle to the acquired insertion. If this is lost sight of a "lateral implantation" ensues, resulting in little or no benefit to the patient. Surgeons, for long too closely wedded to the anastomosis of two tendons through short incisions, have lost sight of the intervening "kink" round which the tendon works with a maximum of friction and a minimum of effectual pull. This is particularly noticeable in the transposing of flexor muscles to act as extensors by passing them through the interosseus membrane, or the anastomosis of the palmaris longus to the extensor ossis metacarpi pollicis. The general lie of the muscle and oblique opening through the interosseus membrane or pronator quadratus, with a straight line passing through the points formed by junction of belly and tendon, interosseus opening, and insertion into the bone, are the essentials to be aimed at. Muscles do not act well when pulling round an imperfect muscular or fascial corner.

Re-education of the Transplanted Muscles.—Flexor muscles probably never act as extensors when their insertion is transplanted with this end in view. They probably act by fixing the carpus or by overbalancing their recently divorced brother flexors, bringing about some degree of extension when a flexor impulse is initiated in the cerebral cortex, since they are more powerful muscles than the surviving flexors. In any case they allow the flexors of the fingers better play, and before this can be effected to the maximum of its power, considerable re-education is necessary. This takes the form of active and passive "purposive" movements, faradism to the bellies of the transplanted muscles, and ergographic contractions of the fingers, which by the "rebound" helps to stimulate the contraction of the newly acquired extensors.

Early Movements.—Slight passive extension of fingers and carpus should be begun quite early (after a week or ten days), but active movements should be delayed until six weeks after operation.

The method of anastomosis I have used has been that of buttonholing the receiving tendon, inserting the donating tendon through it, and carrying its distal end for some distance along the dorsal aspect of the receptor, and fastening with several fine linen thread sutures.

In conclusion it might be mentioned that the observations in this paper are based on some dozen cases. In almost every instance the patient voluntarily expressed himself as well pleased with the result. I do not recall any case in which there was not at least a fair degree of improvement on the ante-operative paralytic condition.

NOTES ON CASES OF INFLUENZA IN A BASE HOSPITAL IN ITALY.

BY

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DURING a period of ten weeks (September 20th, 1918, to November 30th, 1918) a severe epidemic of influenza occurred in the area served by the hospital. Among the cases admitted 43 deaths occurred; it is with these that the present paper deals.

In 15 of these 43 cases an examination of the sputum was made during the early stage of the illness. In 9 instances the sputum was so heavily contaminated from the mouth, being loaded with bacteria of mixed types, that it was not possible to pick out any which could be regarded as likely to have been present in the bronchial secretion. In 2 cases (13 per cent.) pneumococci were found, in 1 case (7 per cent.) streptococci, and in 4 cases (27 per cent) influenza bacilli. By the term influenza bacilli is meant bacilli, sometimes free, sometimes enclosed within polymorphonuclear leucocytes (both forms frequently occurring together), having a length of 0.8 μ to 1.5 μ, and a breadth of 0.5 μ to 1.0 μ, not staining by Gram's method, and presenting some variation in length and breadth in different sputa and cultures, as also in the same stained preparation.

It is of interest to compare the above figures with those obtained in the routine examination of sputum from patients in the hospital during the period under observation. In all, 116 specimens of sputum were received; of these, 64 (55 per cent.) were too heavily contaminated in the mouth to be of value; 28 (24 per cent.) contained influenza bacilli, 2 containing also pneumococci and 1 streptococci; 10 (9 per cent.) contained *Diplococcus catarrhalis*, 7 (6 per cent.) pneumococci, 3 streptococci, 1 staphylococci, and 1 tubercle bacilli. In all cases the bacteria enumerated were present in great abundance. If the specimens which were heavily contaminated from the mouth are discarded, the above percentages are much higher: thus the specimens in which influenza bacilli were found form 57 per cent. in the first series and 54 per cent. in the second. The latter series represented all the cases in hospital; it was not confined to cases regarded as influenzal.

On *post-mortem* examination, pneumonia was present in every case except two (95 per cent.), affecting both lungs in 37 cases (86 per cent.), and complicated in 5 cases (11.5 per cent.) with pleural effusion, in 8 cases (18.5 per cent.) with empyema, and in 1 case with pneumothorax. Cloudy swelling of the kidneys, liver, and spleen, friability of the heart muscle, and enlargement of the mesenteric and mesocolic lymphatic glands were present in varying degree in different cases. Enlargement of the adrenals, with collection of a brownish liquid or of semi-liquid material between cortex and medulla, was met with. Slight enlargement of Peyer's patches, with or without enlargement of the solitary glands of the small intestine in the neighbourhood of the caecum, was also observed. In one case there was ulceration of the large intestine, and in two cases blood staining of the root of the aorta and of the pulmonary artery was marked.

Microscopical examination of the exudate from the affected lung showed influenza bacilli in 17 cases (38.5 per cent.), streptococci in 18 cases (42 per cent.), staphylococci in 7 cases (16 per cent.), pneumococci in 7 cases (16 per cent.), and *Diplococcus catarrhalis* in 2 cases (4.5 per cent.); in 7 cases (16 per cent.) no bacteria were found. Double infections were observed in 14 cases—namely, influenza bacilli + streptococci, 4 cases; influenza bacilli + pneumococci, 2 cases; influenza bacilli + *D. catarrhalis*, 2 cases; influenza bacilli + staphylococci, 1 case; and staphylococci + streptococci, 4 cases. In one case a triple infection of influenza + staphylococci + streptococci was observed.

At thirty-five of the autopsies blood-agar cultures from the hepatized lung were made. Colonies of influenza bacilli were obtained in 15 cases (43 per cent.), staphylococci in 19 cases (54 per cent.), streptococci in 19 cases (54 per cent.), pneumococci in 2 cases (6 per cent.), *M. tetragenus* in 1 case (3 per cent.), and Gram-positive bacilli in 1 case. Influenza bacilli and staphylococci were obtained in 3 cases, influenza bacilli and streptococci in 5 cases, influenza bacilli, staphylococci, and streptococci in 2 cases, influenza bacilli, staphylococci, and pneumococci in 1 case, staphylococci and streptococci in 8 cases, streptococci and *M. tertragenus* in 1 case. In one case no growth was obtained.

The blood-agar medium was made by adding to peptone meat extract agar (previously melted at 100° C. and then cooled to 50° C. to 45° C.) 10 per cent. of a solution of blood (warmed to 40° C.). The latter solution was prepared by mixing 5 c.cm. of human blood, withdrawn from a vein, with 95 c.cm. of sterile 0.85 per cent. sodium chloride solution, and then laking by the addition of 10 c.cm. of ether. Colonies of influenza bacilli were isolated by plating out.

In several instances influenza bacilli could not be obtained in culture though present in the lung exudate; the reverse was also observed. In three cases influenza bacilli were found in the sputum, but subsequently at the autopsy could not be recognized in the lung exudate on microscopical examination of a smear preparation; in one of these cases however, colonies of influenza bacilli were obtained on culture from the lung exudate.

If all observations are grouped together (sputum, smear from lung exudate, culture from lung exudate) the following figures are obtained: Influenza bacilli were found in 56 per cent. of the cases; staphylococci in 51 per cent.; streptococci in 49 per cent.; pneumococci in 18.5 per cent.; *Diplococcus catarrhalis* in 7 per cent.

The cases first occurring were of a severe type rapidly terminating fatally; subsequent cases were of longer duration, and were frequently complicated with pleural effusion and empyema.

CHRONIC TRENCH FEVER.

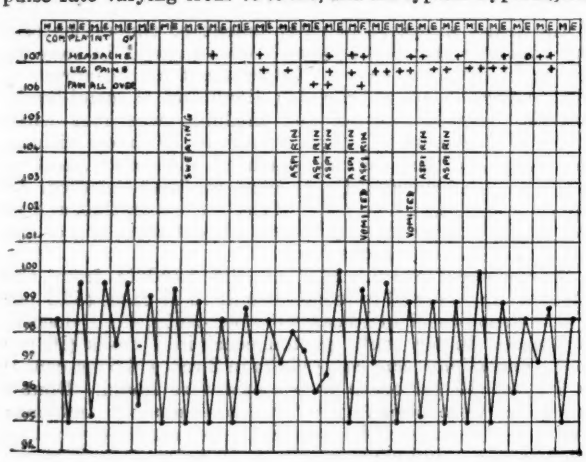
BY

GORDON WARD, M.D.

DURING the last few years many cases of trench fever have passed through the hands of medical officers, and the disease is likely to trouble us and our patients for some years to come. For this reason I am prompted to send a note of two cases which exemplify somewhat unusual symptoms, although such as the nature of the disease would lead us to expect.

CASE I.

Pte. C. W. B., Royal Warwicks, was admitted to hospital as a N.Y.D. case. He complained of extreme pain in the head and legs, and of sleeplessness due to the pain. He presented the following signs, namely, frequent sweating, irregular temperature, never above 100° at night, and showing no definite periodicity, occasional vomiting, and more frequent nausea; pulse rate varying from 76 to 116, and the typical hyperalgesic



areas (C8 and D1; D 7, 8, 9; all lumbars) described by Carmalt-Jones. A diagnosis of trench fever seemed fully justified. It was thought that cases of trench fever with small evening pyrexia might show a much larger swing than normal below the normal line. A few cases and a few controls from other cases were therefore put on special charts. This case was the best example obtained of the phenomenon expected. Chart herewith shows this. It was not found to anything approaching the same extent in any case not trench fever. Possibly this may be of some assistance in diagnosis.

It was very difficult to obtain accurate records of pulse rate in all cases, but it may be stated that this followed the temperature pretty accurately except that the prevailing rate was lower after he had been in bed a week. Case II is an example of vasomotor symptoms. These have not attracted much notice but are mentioned in the American report. Analogy with malaria led me to look for them, and some degree of "dead fingers" and "dead feet" was noted in several cases. Cases were not included unless the "dead areas" were obvious to sight and touch. Other symptoms of the same order resembled giant urticaria and erythromelalgia.

CASE II.

Rfn. A. E. B., K.R.R.C., was admitted with typical acute trench fever. In the first seventeen days he had four bouts of pyrexia. After this the temperature became irregular. On the twenty-sixth day he had acute pain in the legs, which were observed to be very red (the feet only). This was much increased when the legs were allowed to hang over the edge of the bed. This erythromelalgic syndrome was not observed again. On the twenty-ninth and thirtieth days he had slight haematuria, the urine contained a few granular blood casts. On the thirty-second day the urine was free from albumin and casts and remained so. At the same time as the haematuria there was some oedema of the calves of the legs, there was none of the feet. The oedema was very slight. There was no other oedema. His temperature was 101° on the two days of haematuria, afterwards it did not exceed 99°. His pulse was usually between 60 and 80; it was not recorded in the acute stage of his illness except on admission, when it was 116. He was up on the fortieth day, and sent to England on the forty-second.

Case II did not suffer from dead fingers, and the erythromelalgic symptoms were only present on one occasion. I consider that the haematuria was not significant of a kidney lesion but rather analogous to the occasional haematuria of malaria. It may have been haemoglobinuria, and this seems probable on theoretical grounds. It was not reported until the thirty-ninth day, and the next specimen obtained did not contain blood cells but only casts containing yellow pigment. The quick disappearance of urinary signs is also significant. I have seen oedema of the calves also in malaria in the absence of albuminuria. This note does not profess to be complete; it was very difficult to carry out detailed investigations in France, but I hope that, in spite of this, the mere mention of such symptoms may be of use to others and of interest from the theoretical side.

April 20th, 1919.

Lettsomian Lectures

ON

JAUNDICE: WITH SPECIAL REFERENCE TO TYPES OCCURRING DURING THE WAR.*

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LECTURE III.—PART II.

SPIROCHAETAL AND ACHOLURIC JAUNDICE, ETC.

INFECTIVE JAUNDICE IN SPIROCHAETOSIS ICTERO-HAEMORRHAGICA.

THIS form of jaundice was first differentiated by two Japanese workers, Inada and Ido,[10] in November, 1914, who made a brilliant investigation into the etiology, symptomatology, and pathology of the disease.

In September, 1916, Captain A. Stokes, R.A.M.C., and Captain J. A. Ryle, R.A.M.C., published[11] an account of several cases they had carefully investigated amongst our troops in Flanders, and later, in January, 1917,[12] they published a further account of this work. Major-General Sir Bertrand Dawson, Lieut.-Colonel Hume, R.A.M.C., and Captain S. P. Bedson, working independently, published[13] a very complete account of their observations on cases

* Delivered before the Medical Society of London, April-May, 1919.

occurring in the army in France, and in November, 1918,[14] at the Royal Society of Medicine, London, Sir Bertrand Dawson gave a further more detailed account of this disease.

During the past three years this form of jaundice has been closely studied in various parts of the world and most careful investigations have been made. Thus in the French army the disease was found by Martin and Pettit, who published[15] an account of it in October, 1916, and have made several further contributions. Investigations on similar lines have been made in the Belgian and Italian armies.

The occurrence of the disease in rats has also been closely studied on the Continent, in Japan, America, and elsewhere, and in March, 1918, Dr. A. E. Coles[16] found on examination of rats at Bournemouth that 9 per cent. were infected with the specific spirochaete.

Accounts so full and careful have been published recently of this disease that it will be unnecessary to give a detailed description.

The Clinical Manifestations.

An excellent account of these was given by Sir Bertrand Dawson,[14] which I cannot do better than quote:

> The disease has more often a sudden than a gradual onset, and manifests itself by shivering, head and body pains, great prostration, vomiting, and diarrhoea. The temperature rises quickly to 102° or higher. During the succeeding three or four days the conjunctivae become injected, and herpes, which is liable to become haemorrhagic, appears on the lips in about 40 per cent. of the patients. Bleeding occurs in most of the severe cases, but uncommonly in the mild cases. It may come from the nose, lungs, stomach, bowel, or as a purpuric rash. Early in the illness a slight haemoptysis is a valuable diagnostic sign. It is to be noted that haemorrhage often precedes jaundice in order of appearance.
>
> The jaundice usually appears on the fourth or fifth day, but may be as early as the second and as late as the seventh day. It reaches its height about the tenth to twelfth day. In some cases it is intense, and the skin takes the greenish hue met with in complete obstruction of the common bile duct. Constipation is marked. The stools may become clay-coloured, though in most cases a small quantity of bile gives them a light brown coloration. Tenderness in the upper abdomen is usual. The tongue is furred and brown. The liver is frequently enlarged to the extent of two or three fingerbreadths below the costal margin. The spleen is not palpable. The glands in the axillae and groins are sometimes enlarged and shotty.
>
> In severe cases there are evidences of an acute bronchitis. The respiration rate may rise to 28 or 30, and when a fatal result is impending may resemble that met with in uraemia. The pulse is slow in proportion to the pyrexia, a rate of 75 to 85 being quite usual.
>
> In this respect the disease resembles enteric fever, though differing from the latter in that the heart does not lock with atropine. The systolic blood pressure is about 120 mm., being higher than that of enteric fever.
>
> The early weakness and prostration are characteristic of the disease. Frontal headache and aching behind the eyeballs are distressing symptoms of the commencement, but diminish as the days pass. The muscular pains last longer and are at times intense. Twitchings and convulsions may precede or accompany the coma of the fatal cases.
>
> The urine contains bile in abundance, which may persist for four to five weeks. Albumin is usually present, and may reach a sixth; casts—hyaline, epithelial, and granular—are common. Some French authors lay stress on the evidence of renal insufficiency.
>
> The course of the illness varies with the severity of the disease. In the acute case an irregular type of pyrexia persists for ten to fourteen days and ends by lysis. In some instances there is a secondary rise of fever about the beginning of the third week which is difficult to explain, since there is no accompanying exacerbation of symptoms or increase of jaundice. The jaundice will reach its height about the tenth day, and this often coincides with the fall of the temperature. In other cases the temperature will fall earlier while the jaundice is still deepening. Convalescence is slow, but recovery is complete.

It is interesting to note that spirochaetosis icterohaemorrhagica may occur without jaundice. Stokes[12] stated that in 100 cases examined by him jaundice occurred in only 60 per cent.

Morbid Anatomy.

In three cases described by Sir Bertrand Dawson, marked evidence of duodenitis and intense inflammation in the area round the ampulla of Vater were found. In one of his cases associated with this duodenitis was a plug of mucus impacted in the ampulla. He says that it would seem clear that in some cases the spirochaetal infection localizes in the duodenum. Stokes did not mention the occurrence of duodenitis in his fatal cases. Both observers describe the bile ducts as being free from inflammatory changes to the naked eye. Usually the liver showed few abnormal changes macroscopically, but on microscopical examination evidence of cellular degenerative changes was found in some instances. In one case described by Dawson the liver was diminished in size, its capsule wrinkled, and microscopically there were numerous areas of cell necrosis—in other words, a condition of acute yellow atrophy. Hart quotes[17] a case in which extensive replacement fibrosis had supervened on acute yellow atrophy, just as in Case 1 of my tetrachlorethane cases.

The condition of acute yellow atrophy in fatal cases of spirochaetosis icterohaemorrhagica is apparently uncommon; death usually results from the toxaemia of the disease rather than from auto-intoxication consequent on acute yellow atrophy.

In all cases the kidneys showed some degenerative changes in the epithelial cells. In some there was evidence of a nephritis which in a certain number was haemorrhagic. In none of Dawson's or Stokes's cases was there found any enlargement of the spleen.

Clinical Pathology.

The scarcity in number of organisms present in infected patients makes it necessary frequently to resort to guinea-pig experiments in order to discover the spirochaete. The guinea-pig is extremely susceptible to the disease; the introduction of infected material into the intraperitoneal cavity is followed, after an incubation period, by a rapid development of typical symptoms associated with a heavy infection, so that it is easy to demonstrate the spirochaete.

In man the blood infection is of short duration, and after the fifth day of the disease the chances of a positive result diminish. The infection, as already mentioned, is not heavy, so that blood film examinations are usually negative. Introduction of some of the blood (3 c.cm.) into the peritoneal cavity of a guinea-pig is likely to give a positive result up to the seventh day of the illness.

The urine from the tenth day to the fifth week usually contains spirochaetes, and the centrifugalized deposit may yield a positive result on microscopical examination, or a portion injected into a guinea-pig may reproduce the disease in it. The spirochaete obtained from the urine is agglutinated by the blood of the patient after the fourteenth day of the disease.

After the fourteenth day of the disease protective substances conferring immunity are found in the blood, and an immunity test with guinea-pigs was described by the Japanese workers and has been confirmed by Stokes and Dawson.

Mortality.

The Japanese workers found a high mortality (about 30 per cent.). Stokes put the mortality in his cases at less than 6 per cent. Dawson estimates it as not more than 4 to 5 per cent. in his series.

A comparison of the symptoms of spirochaetosis icterohaemorrhagica with those of epidemic catarrhal jaundice renders it clear that the two diseases are quite distinct. In the latter the low mortality, the premonitory period of several days before the onset of pyrexia, the absence of herpes and of haemorrhagic symptoms, the absence of symptoms of severe toxaemia, the common occurrence of splenic enlargement, are prominent distinguishing features.

Weil's Disease.

In this type of jaundice, described by Weil in 1886, the symptoms resembled in many respects those of spirochaetosis icterohaemorrhagica, but important points of difference are the high mortality (30 per cent.) and the marked splenic enlargement. The German workers strenuously deny that Weil's disease is identical with spirochaetosis icterohaemorrhagica, either clinically or bacteriologically.

It is, in my opinion, most desirable to abolish the term "Weil's disease" entirely. For cases of that type, in which no specific spirochaete or other infection are found, it would be far better to use the term "haemorrhagic infective jaundice."

Kartulis described[18] a form of haemorrhagic infective jaundice which he studied carefully in Egypt. It has been called by various writers Mediterranean yellow fever, Weil's disease, spirochaetosis icterohaemorrhagica, and by other names. Such a method of nomenclature is, to

say the least of it, most unscientific. Until the cause of a particular type of disease has been conclusively proved, some general term such as "infective haemorrhagic jaundice" should be given it.

JAUNDICE IN ANAEMIA.

In chlorosis jaundice is almost invariably absent.

In pernicious anaemia a waxy, lemon yellow tint of the skin is common, but a definite yellow tint affecting both skin and conjunctivae is rare. In a series of 1,200 cases described by Dr. R. C. Cabot,[19] in only 12 was the yellow tint so distinctive that the term jaundice could be applied. Marked jaundice scarcely ever occurs in this disease.

In Banti's disease, or splenic anaemia, jaundice is a rare symptom. If the splenomegaly is accompanied by progressive cirrhosis of the liver, jaundice, usually slight, is present.

ACHOLURIC JAUNDICE.

The congenital type of acholuric jaundice was first described by Minkowski in 1900, and since then numerous cases have been recorded. Its characteristic features are:

1. A family history of the disease.
2. Chronic splenomegaly.
3. Maintenance of fair health for a long period.
4. Chronic slight jaundice.
5. Presence of urobilin but absence of bile pigment in the urine.
6. Increased tendency to haemolysis of the red blood corpuscles.
7. Bile pigment in the blood serum.

I have recently examined, at St. Mary's Hospital, a very typical case of this disease which is under the care of Dr. F. S. Langmead, and it is by his kind permission that I quote the notes of the case.

CASE.

H. S., a man aged 42, was sent to hospital with a very accurate and detailed medical history by Dr. R. Craik.

The patient came into medical hands because he had been called up for active service in October, 1917; though his spirit was willing he felt his strength to be weak, and he wisely sought medical advice. He complained of breathlessness on exertion and inability to do heavy work, though his health had been fairly good and he had for some time done light work. At this time he was anaemic; the heart was somewhat dilated, with a haemic systolic bruit at the apex. The spleen was enlarged, but definite jaundice was not present. There was a history of previous "yellowness," especially following cold or exertion. In 1918 slight jaundice was observed on several occasions, but its depth varied from time to time.

When examined there was definite slight jaundice affecting both the skin and conjunctivae, pallor, marked splenic and some hepatic enlargement, and dilated heart, with a haemic systolic bruit at the apex region. There was no history of syphilis or alcoholic indulgence. The family history, however, was striking. Of his four children, two girls, aged 12 and 10 respectively, were jaundiced, one girl aged 5 was healthy, a boy had died "delicate," aged 3. H. S. had two sisters who died at the ages of 18 and 8 respectively of jaundice and dropsy, another sister died at 29 from "heart disease," a fourth sister died at the age of six months, and his only brother died at birth. The patient's mother and grandmother both suffered from jaundice.

Blood examination at St. Mary's Hospital:

Red blood corpuscles	2,600,000 per c.mm.
Haemoglobin	42 per cent.
Colour index	0.8 per cent.

Haemolysis of red blood corpuscles commenced in 0.5 per cent. salt solution, as compared with 0.4 per cent. for normal red cells. The leucocytes numbered 14,000 per c.mm.; there was nothing noteworthy as regards their variety. The urine contained a large excess of urobilin, but no bile pigments.

In this form of jaundice the icterus is not always present at birth, but may develop in childhood.

Cases with no family history have been described by Osler, Eason, Parkes Weber, Rowland Hill, and others.[20] The jaundice and other symptoms have the same characters as the congenital form.

Hereditary icterus occurring at birth has been studied by Dr. John Thomson,[21] who has given classical examples of its hereditary nature. He attributes the disease to a congenital narrowing of the bile duct, coupled with an inflammatory condition set up by the altered bile. The congenital acholuric jaundice already described comes under this head.

ICTERUS NEONATORUM.

Jaundice in the newborn may be physiological, a fairly common mild form which soon passes away, or a severe type due to (*a*) congenital absence of the common bile duct; (*b*) congenital syphilitic hepatitis; (*c*) an infective form set up by septic infection from the umbilicus, or more commonly by an infection of intestinal origin.

In this, unlike other forms of jaundice, the central nervous system often shows bile staining.

ACUTE YELLOW ATROPHY OF THE LIVER.

Acute yellow atrophy, described in the textbooks as a separate disease, is a condition of common occurrence after many chemical poisons and many infective processes. Its not infrequent occurence in pregnancy, due no doubt to the production of autogenous poisons, is of special interest. It is a morbid anatomical condition of the liver due to some toxic cause, and with increased knowledge will cease to be regarded as a separate entity.

The morbid anatomical condition of the liver known as "acute yellow atrophy" causes loss of hepatic function, and this gives rise to the "symptom complex" known as "icterus gravis." It is in this sense that I have used the term "icterus gravis" throughout these lectures, in the course of which it has been amply demonstrated that the loss of function of the liver, symptomatically expressed by "icterus gravis," may result not only from a condition associated with shrinkage ("acute yellow atrophy") but also, as in delayed chloroform poisoning, from an extensive and rapid degenerative change of the liver cells followed by loss of function, no diminution in size or "atrophy" of the organ occurring.

CONCLUSION.

The above review of the subject of jaundice emphasizes the paramount importance of observation and experiment in determining the cause of disease and gaining exact knowledge. Down to 1881 knowledge had only enlarged upon that of Hippocrates as the result of the observations through *post-mortem* examination in fatal cases; this could go so far, but no further. In 1881 came the great advance due to animal experiments, of which those on dogs were of essential importance. Stadelmann, and in this country Hunter, by these experiments advanced our knowledge enormously. Since then progress has been steady and has been very great during the period of the war; every step has been the result of observation and experiment, and without the bacteriological, chemical, and physiological investigations in the laboratory we should have made little, if any, advance.

The history of jaundice is an object lesson showing the grounds on which scientific medicine should be based in the future.

In the study of disease clinical observation is of first importance, but it can carry us only a certain distance towards the goal of full knowledge. Clinical observation by the physician must go hand in hand with scientific experiment by the experimental worker if progress is to be sure and rapid. Neither alone can achieve the result. The physician and the scientific worker in the laboratory should be familiar each with the other's work and aspirations, and should ever lend a guiding hand to one another. The medicine of the future will attain that perfect advancement and full knowledge which all desire by the association of the physician and the scientific worker, not only in the laboratory, but also at the bedside.

ACKNOWLEDGEMENTS.

For very valuable help in the work on which these lectures are based I am especially indebted to Dr. B. H. Spilsbury, Dr. T. M. Legge, and to Mr. J. Webster, F.I.C., for their great assistance in the investigations relating to toxic jaundice.

For the work done during my period of military service I am very grateful for the help and encouragement always afforded me by Major-General Sir Francis Treherne, K.C.M.G., D.M.S. of the Mesopotamian Expeditionary Force (1916-1917), and to Major-General A. P. Blenkinsop, C.B., C.M.G., D.M.S. of the Mesopotamian Expeditionary Force (1917-1919). I am specially indebted to General Blenkinsop for the statistical figures quoted relating to epidemic jaundice. I desire especially to thank for very valuable help Lieut.-Colonel J. C. G. Ledingham, C.M.G., R.A.M.C., Lieut.-Colonel J. D. Graham, C.I.E., I.M.S., Major F. P. Mackie, C.I.E., I.M.S., Major R. S. Archibald, R.A.M.C., Major T. H. Gloster, I.M.S., Major Dunbar Walker, R.A.M.C., Captain M. A. Nicholson, I.M.S., Captain R. A. Woodhouse, R.A.M.C., and Captain Jarvis, R.A.M.C.

REFERENCES.

[10] Inada, Ido, Hoki, Kaneko, and Ito: The Etiology, Mode of Infection, and Specific Therapy of Weil's Disease, *Journ. of Exper. Med.*, xxiii, March 1st, 1916, p. 377.

[11] A. Stokes and J. A. Ryle: A Note on Weil's Disease (Spirochaetosis Icterohaemorrhagica) as it has occurred in the Army in Flanders, BRITISH MEDICAL JOURNAL, September 13th, 1916.

[12] Stokes, Ryle, and Tytler: Weil's Disease (Spirochaetosis Icterohaemorrhagica) in the British Army in Flanders, *Lancet*, January 27th, 1917.
[13] Sir Bertrand Dawson, Lieut.-Colonel W. E. Hume, and Captain S. P. Bedson, R.A.M.C.: Infective Jaundice, BRITISH MEDICAL JOURNAL, September 15th, 1917.
[14] Major-General Sir Bertrand Dawson: An Address on Spirochaetosis Icterohaemorrhagica, *Lancet*, November 2nd, 1918.
[15] Martin et Pettit: La spirochétose icterohémorrhagique, *Bull. Méd.*, July 28th, 1916. Also *Bull. de l'Acad. de Méd.*, October 10th, 1916, p. 247.
[16] A. C. Coles: A Note on the Occurrence of *Spirochaeta icterohaemorrhagiae* in the Common Rat in England, *Lancet*, March 30th, 1918.
[17] C. Hart: *Muench. med. Woch.*, lxiv, 1917, p. 1598.
[18] Kartulis (1915): A Discussion on Cases of Jaundice in the Military Hospitals of Alexandria, November 7th, 1915. BRITISH MEDICAL JOURNAL, 1916, vol. ii, p. 320.
[19] R. C. Cabot: *A System of Medicine* (Osler and Macrae), vol. iv, p. 612.
[20] Osler: *The Principles and Practice of Medicine*. Eason: Acquired Acholuric Jaundice, *Edinburgh Med. Journ.*, 1918. Parkes Weber: Royal Society of Medicine, February, 1917. Rowland Hill: *Acquired Acholuric Jaundice*.
[21] Dr. John Thomson: *System of Medicine* (Allbutt and Rolleston), vol. iv, Part I., p. 99.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACRIFLAVINE IN THE TREATMENT OF GONORRHOEA.

THE recent paper by Davies and Harrell,[1] of the Urological Institute, Johns Hopkins Hospital, an abstract of which appears in the BRITISH MEDICAL JOURNAL of March 22nd, 1919, is further evidence, if any be needed, of the discordant views of different observers. The writers point out that acriflavine is highly diffusible, and that it penetrates the mucosae of the urethra and bladder, that it is an antiseptic of high power, and inhibits the development of the gonococcus in dilutions of 1 in 300,000. There is no doubt that in the laboratory these results can be, and have been, obtained. But I am certain few who have had any large experience in the treatment of gonorrhoea will agree with the writers regarding its action on the living subject. They state the most satisfactory concentration is found to be 1 in 1,000; that the smarting is almost negligible, and that organisms disappear from the urethra after two or three injections. I have used this preparation, selecting 23 cases of ordinary uncomplicated gonorrhoea, carrying out the exact régime laid down by the writers. Of these 23 cases, 6, or 26 per cent., showed that at the end of three weeks Gram-negative diplococci, morphologically indistinguishable from gonococci, and purulent beads, were present within twenty-four hours after stopping the injection. Of the remaining 17, 13, or 76 per cent., showed pus cells in their smears, and their anterior washes, when centrifugalized, had a purulent deposit. The remaining 4 showed mucus and epithelium. Far from causing only slight smarting at the strength recorded, the patients treated complained at the end of ten days of severe smarting and dysuria, which has never been a symptom in any cases treated with ordinary solutions of protargol. I have found that in cases of submucous infiltrations or in soft strictures associated with gonorrhoea the remedy is apt to produce retention of urine. The fact of the urine remaining yellow for hours and the leucocytes being well stained is of little clinical significance. The remedy, I believe, has had an extensive trial at Rochester Row under the very careful observation of Colonel Harrison, and his views on the treatment of gonorrhoea have been stated before the Royal Society of Medicine, but I doubt if he even referred to this remedy.

JOHN ARMSTRONG,
Captain R.A.M.C.

London, W.

[1] *Journal of Urology*, vol. ii, 1918.

HYPERPYREXIAL HEATSTROKE.

THE article by Mr. K. G. Hearne on hyperpyrexial heatstroke, in the JOURNAL of April 26th, leads me to record a case which occurred in the hospital to which I was attached in Mesopotamia. It supports the view that the condition is due to cessation of sweating, as in the case in question the condition was accidentally caused by a hypodermic injection of atropine.

It was the custom on the surgical side to give every patient before operation a hypodermic injection of morphine gr. ¼ and atropine sulphate gr. $\frac{1}{100}$ unless specially contra-indicated. The injection was given by the sister in charge of the ward. In 1917 the intense heat of summer commenced suddenly, and owing to a misunderstanding the injection of atropine was not countermanded. The anaesthetist noticed that one of the first cases to be operated upon after the heat wave broke was unduly unconscious, and that the patient's skin felt hot and he was not sweating. The thermometer showed the temperature to be 108° F.; the operation was suspended and an ice pack brought the temperature down within the limits of safety. On succeeding days the temperature showed no tendency to rise, thus differing from ordinary cases of heatstroke. This was the only case which occurred in the theatre; as it was built of brick the temperature in it was usually 12° to 15° lower than that in the wards, which were constructed of mud.

I entirely agree with Mr. K. G. Hearne that hyperpyrexial heatstroke is preventable among hospital patients, but in my experience the "incubation period" before the onset of delirium, unconsciousness, etc., should be allowed a wider margin than from one to forty-eight hours. I have seen sweating men while accomplishing a necessarily forced march during the heat of the day struck down with hyperpyrexia of 110° and accompanying symptoms within a few minutes. Doubtless the combination of external heat and heat derived internally from muscular exertion caused the abruptness of onset in these cases. On the other hand, one case gave a clear history of premonitory symptoms—sense of oppression, marked restlessness, frequency of micturition, etc.—extending over a period of four days.

Devonport. R. J. MCNEILL LOVE, M.B., B.S.Lond.

RUPTURE OF BRANCH OF THE CORONARY ARTERY.

ON April 18th Mrs. E. H., aged 80, was admitted to the infirmary with a diagnosis of arterio-sclerosis and bronchopneumonia. The heart was rapid but regular, and there was no bruit. There was a history of a fall off a chair a few days before admission, and there were some bruises and abrasions on the back. A history of chronic bronchitis and occasional attacks of giddiness was elicited.

About an hour and a half after admission I was urgently sent for. I found the patient suffering from syncope; the pulse at the wrist could not be felt, though the heart sounds were faintly audible. She rallied a little under the influence of cardiac stimulants, but died in about three hours afterwards. She never complained of any pain in the chest.

As there was a distinct history of a fall, the matter was reported to the coroner, and I made a *post-mortem* examination by his order. There were evidences of general arterio-sclerosis; there was oedema of the cortex and the whole of the brain, and its blood vessels were very anaemic. The kidneys showed signs of an early stage of arterio-sclerosis; other abdominal viscera were normal. There was evidence of chronic bronchitis and emphysema with commencing bronchopneumonia, and old adhesions between the right lung and the pleura. The pericardial sac contained a large clot of blood weighing over 3 oz.; its source was found in a rupture of a branch of the right coronary artery. The muscles of the heart, though flabby and exhibiting fatty degeneration, were quite intact. The aortic valves showed a certain amount of thickening. The aorta and the coronary vessels showed atheromatous patches. Possibly a fit of coughing accounts for the sudden rupture of the degenerated coronary vessel.

In searching the literature on this subject, the only reference that I have come across is by Sir Clifford Allbutt in his book on diseases of the arteries, page 368, where he says: ". . . as I have twice observed, haemorrhage into the pericardium from a ruptured coronary was quite painless." This being so, I have no hesitation in recording this very rare occurrence.

D. N. KALYANVALA, M.R.C.S.Eng.,
Assistant Medical Superintendent, Chelsea Infirmary, London.

THE General Association of French Medical Practitioners, at its annual meeting on May 4th, unanimously elected Dr. Darras president for a term of six years.

Reviews.

PENSIONS FOR EYE AND EAR INJURIES.

IN our review of the book, *Pensions and the Principles of their Evaluation*,[1] by Drs. L. J. LLEWELLYN and BASSETT JONES (BRITISH MEDICAL JOURNAL, April 5th, 1919, p. 413), promise was made to deal later with the section on the eyes and ears. This promise we now attempt to fulfil. The writer of the chapters on the evaluation of injuries to the eye is Mr. W. M. BEAUMONT of Bath, who has shown his mastery of the subject in his book on injuries to the eye in industrial occupations. He cites the award of the Romans to Horatius of the means by which he could earn his own living (in his case a grant of land) as the model method of treating those blinded in the war, and this, he states, has been attained by the re-education of the disabled, for if we put sight in one scale we cannot fill the other with sufficient money to make a balance.

Mr. Beaumont appears to hold that the blinded man during the period of his re-education or his apprenticeship should receive a temporary pension, and that when he has arrived at a state of limited perfection in his new work the time has come to determine his loss and to fix a permanent pension. This, if we understand its practice aright, is not the view of the Ministry of Pensions, a man who has lost the sight of both eyes being entitled to the maximum pension, irrespective of what, through re-education, he may eventually be able to earn. Grants for the loss of an eye and for the total loss of sight are in British practice not logical. The Royal Warrant awards for the loss of an arm and an eye, or a leg and an eye, 100 per cent., for total loss of sight 100 per cent., for loss of one eye 50 per cent. The list fails to distinguish between the loss of an eye and the loss of the sense of sight. To estimate the loss of one eye at 50 per cent. and the loss of two eyes at 100 per cent. is manifestly wrong. A man who has lost one eye may return to his work, and though handicapped to an extent which may be trivial in some occupations but serious in others, yet retains the sense of sight and the powers which reside in it. The man who has lost both eyes, and thereby the sense of sight altogether, is incomparably the greater loser. Mr. Beaumont thinks that both assessments are wrong; for one eye it is too high and for both eyes too low. This view is borne out by the practice of foreign countries, where the loss of one eye averages about 25 per cent., and for both eyes up to 125 per cent. Further, the warrant takes no account of the case of a man whose loss of one eye has left him with the other defective from pre-war conditions. The real failure of the warrant is in attaching importance rather to anatomy than to function.

The experience of pensions boards demonstrates the necessity of thorough and accurate registration of the sight of recruits by capable examiners. The man says: "My sight was good when I enlisted or I should never have been enrolled"; yet examination of his eyes proves the existence of congenital malformations or old disease which must have been present years before military life began.

The main question Mr. Beaumont sets himself to answer is, What is the loss of function, and what is the value of that function from the wage-earning point of view? This leads to a consideration of the relation of physiological sight, as measured by the usual tests of visual acuity and field, and professional sight as judged by the known requirements of different professions and trades. Mr. Beaumont gives a very clear statement of the measures taken to ascertain these relations, and the effects of their reduction as worked out by Groenauw, Snellen, Menacho, and others. Charts are provided by which the loss of value may be ascertained from a given factor. But he adds a caution against too much reliance on this tabular form of dealing with a case: the evaluation of sight requires the careful consideration of the personal equation of the individual with regard to general health and strength, congenital aptitude, mental faculties, and capacity for re-education. And finally, is the man young enough to recover to some extent, to learn a new trade, or is he too old to succeed if he make the attempt?

After this discussion of the general problem there follows consideration of the effects of various injuries of the eye and its surrounding structures; loss of one eye; total loss of sight; partial loss of one eye; partial loss of sight of both eyes; total loss of sight of one eye and the partial loss of the other; field of vision; and traumatic psychoneuroses. Of the last section he writes:

> Eye disease is notoriously depressing under any circumstances; how much more must it be when associated with the horrors of war. For wounded eyes under these adverse accompaniments, the occlusive bandage should be used as rarely as possible consistent with the due treatment of the case, for darkness fosters inertia, and the blindfolded soldier broods over the future, and so hinders functional restoration. Sympathetic visitors to the hospital ward unwittingly increase his introspection by pity. . . . The patient should be encouraged to forget himself, and if his eyes permit he should take outdoor exercise with cheerful companions. . . . Indoor mechanical apparatus, whether Swedish or otherwise, perpetuate the neurosis by suggestion. The sham bicycle and the artificial rowing machine should give place to the outdoor realities. Interest should be aroused by mild competition. In general it is better for the man to work the machine than for the machine the man. Unless these oculo-mental cases are taken in hand early, definitely, and thoroughly, with the help of an alienist if necessary, they are likely to become lifelong acquaintances of the Pensions Commissioners.

In a chapter on adaptation in injuries of the eyes the author describes the various remedial efforts followed in this and other countries, work for which St. Dunstan's Hostel has become famous in this country. He further considers the temperament of the man, as it is likely to advance or retard these efforts at adaptation. The shock of the loss, natural inertia, bad health, age, a remnant of vision, and "just enough money to live on"—all act as deterrents. Youth, good health, education in the past, character, and the necessity to think for a wife and family—these are powerful aids.

The last chapter of the work deals with the injuries of the ear. Very many men have suffered lesions of the ear, and the aggravation of aural disorders of old standing has been common. The lesions are discussed according to the grouping suggested by Bourgeois and Sourdille—the traumatic causes enumerated are wounds of the external ear; injuries to the tympanic membrane and its cavity; wounds in the auricular-mastoid region; war deafness due to labyrinthine concussion from direct violence and from explosions; lesions of the nerve tracts, and psychogenic causes. Non-traumatic causes include otitis, both externa and media, acute and chronic.

In considering what the Pensions Ministry calls "attributability" in the assessment of loss in deafness great stress is laid upon the necessity for accurate inquiry into the case, both as to previous history, conditions of injury, and present state. A man's pre-war employment may indicate that he must have had good hearing, or on the other hand his employment may have been one that commonly involves some loss of hearing. Much may be gleaned from the manner in which the patient narrates the onset or cause of his symptoms. Alike in the soldier and industrial worker it will be suggestive of simulation if he says it came on suddenly and yet vouchsafes no history of injury, syphilis, or cranial disease. Apart from these, deafness in general ensues gradually. And hardness of hearing is much more common than total deafness. Particularity in the analysis of the alleged casualty is enjoined, and the testing of the answers by their congruity or incongruity with the history, character, and course of the accident and disorder. Finally, the diagnosis of old injuries and their distinction from recent or superadded injuries is discussed. In assessing the loss of function caused by deafness the aurist is in a more difficult position than the oculist. Deafness cannot be accurately estimated by any numerical formula. Methods of measurement have been suggested according to the distance at which the human voice can be heard. In Schwartze's method the distance at which the ordinary conversation voice is perceptible is estimated: below 1 metre, between 1 and 3 metres, between 5 and 10 metres, and between 10 and 20 metres. The general evidence goes to show how great is the risk of an increase of pre-war deafness by war injury. Canuyt states, on the evidence of 8,000 cases up to April, 1916, that in the majority of soldiers who came back from the front with material

[1] *Pensions and the Principles of their Evaluation.* By L. J. Llewellyn and A. Bassett Jones. With a Section on Pensions in Relation to the Eye, by W. M. Beaumont of Bath. London: W. Heinemann (Medical Books), Ltd. 1919. (Roy. 8vo, pp. xxvii + 702. 30s. net.)

lesions of the hearing apparatus the ear was not sound before the war. The chapter concludes with schedules of assessment of loss, and with that adduced by Major Dundas Grant, the President of the Special Aural Board under the Ministry of Pensions.

We have in the earlier review of the larger and general section of this work commented on its excellence and practical value, and this statement holds true for the section written by Mr. Beaumont. His exposition of the subject is clear, terse, and yet sufficient and exact. He is to be congratulated on the result of his labours and on the great help he has afforded those of his colleagues who are engaged in the same sphere of work.

INSURANCE LAW AND ADMINISTRATION.

IT is a somewhat bold venture to attempt under present conditions to write a commentary on the National Insurance system, especially as it is practically certain that at no distant future radical changes will be made in the law and its administration. The book by Sir E. BROWNE and Sir K. WOOD entitled, *The Law of National Health Insurance*,[2] shows signs throughout that it has been produced under difficulties, and the authors do well to acknowledge in the preface the limitations necessitated by existing conditions.

The plan adopted in the book is to print in heavy black type the various Insurance Acts from 1911 to 1918, and to intersperse in ordinary type comments and annotations, with references to Regulations and Orders. Taking, for example, the principal Act of 1911 as a basis, the modifications of its provisions by subsequent Acts are for the most part brought together under its appropriate sections, some being quoted in full and others merely summarized, so that it is possible almost at a glance to see the present state of the law on any point, and in this respect the book will prove of assistance in insurance work.

After dealing with the various Insurance Acts in this way, a number of other Acts more or less connected with their working are quoted, and the appendices contain various regulations, a list of all the regulations and orders now in force, and a very valuable article on Compensation and Damages.

Perhaps the most outstanding feature in the practical working of National Insurance is the fact that the Acts themselves are merely a skeleton structure while the regulations made under them are the really vital parts. To such an extent does this apply to medical and sanatorium benefits that a most careful study of the Acts alone would give only the vaguest idea of the practical working of these benefits; the same applies to the working of Insurance Committees and approved societies. The authors, however, seem to have thought that a commentary on the skeleton should suffice with bare references elsewhere for information about the vital working details. We can, of course, appreciate the difficulties that confronted them in any attempt to keep pace with the perpetual flow of fresh regulations and orders, but whatever the difficulties may be, there can be no denying the fact that the omission of the full text of the medical benefit regulations, and the consolidated regulations affecting Insurance Committees and approved societies is a serious defect. To Local Medical and Panel Committees and panel practitioners generally a commentary on the regulations that affect them, or at any rate the bare inclusion of the regulations brought up to date, would be equally if not more useful than a mere commentary on the Acts with references only to the regulations. Considering that the book is comparatively small and the price 31s. 6d. these omissions can hardly be excused.

The authors have, however, succeeded in laying the foundation of a most valuable work on the National Insurance, and the limitations which they have imposed on themselves may reasonably be attributed to the "difficulties inseparable from the times."

SURGERY OF TROPICAL DISEASE.

THE literature of surgery in tropical diseases is not large, so that a book by Dr. JOHN R. MCDILL entitled, *Tropical Surgery and Diseases of the Far East*,[3] should meet a want. It is perhaps a little unfortunate that the surgical text is mixed up with medical diseases and that a large part of the work (Chapter XI) is devoted to what is termed "Answers to a questionnaire of fifty-three inquiries sent to countries in and about the tropic zone." The author laments that to the 2,000 copies of his questionnaire he sent out he only received 4 per cent. of responses, and he writes:

> The most of the answers, however, show that the average of medical men and women in and near the equatorial belt are no better and no worse than their brethren in other parts of the world; that about 90 per cent. of practitioners of medicine everywhere, including those in cities, do not record their observations, do not examine their patients in any but the most superficial way, have no proper working library of books and current literature, or do not make their observations and their reading available to themselves or to the world by a simple system of indexing.

Why, then, does the author give seventy-two pages to publishing these details? The purely surgical parts of the book, such as that on liver abscess, are good, and it would have been better to have kept to surgery alone. The part on dysentery seems little more than a compilation from Walker's work in the Philippines, and many of the articles on other medical subjects seem to be compilations from the work of others. The statement that Fedschenko's experiments on the guinea-worm in the cyclops were confirmed by Manson in Turkestan is a curious mistake. There are some good pictures, especially some illustrations of the surgery of liver abscess. Perhaps the most interesting part of the book is the appendix, where will be found chapters on the surgery of the spleen at the Mayo clinic. A perusal of this will repay anyone, but the work as a whole is disappointing.

NOTES ON BOOKS.

DR. HUGH WINGFIELD has written a clear and helpful little treatise on *Alcoholism*,[4] in which the various forms of excessive drinking, their nature, causes, and treatment, are set out within the space of seventy-three pages. The author acknowledges his debt to Dr. Hare's work on alcoholism, and generally adopts, with certain modifications, the method followed at the Norwood Sanatorium, and originally advocated by Dr. McBride. The first principle in the treatment not only of dipsomania and pseudo-dipsomania, but of chronic alcoholism as well, is, of course, total abstinence. It is idle for the drunkard to hope that he can ever drink habitually in moderation; Dr. Wingfield says he has never known one to succeed. One patient—a doctor—exclaimed to him: "Why was I never told this before? Why was I never taught it as a student?" Whereupon this patient made up his mind never to touch alcohol again, and although up till then an extremely severe case of pseudo-dipsomania he has now for five years kept his resolve. This incident, which does indeed cast a grave reflection on the teaching of our medical schools, led to the writing of the present book, "in the hope that sufferers might thereby be enabled to understand their condition, and so perchance be able to save themselves." The result is, in our opinion, a very sensible, temperate, and sympathetic handbook for those who have no time to study more than the rudiments of this most important subject.

The fifth edition of *Pharmaceutical and Medical Chemistry*,[5] by SADTLER and COBLENTZ, is a large and well written book containing an excellent account of inorganic and organic chemistry, together with a less valuable summary of elementary physics. It is designed to meet the needs of the student of pharmacy and medicine, as well as of medical men seeking for information on matters of chemistry. It contains a great deal of chemistry, and although described as a "pharmaceutical textbook" written in connexion with the ninth revision of the U.S. Pharmacopoeia, does not unduly obtrude its pharmacopoeial aspect upon the reader. Several useful tables are included at the end of the volume.

[2] *The Law of National Health Insurance. The National Insurance (Health) Acts, 1911 to 1918.* By Sir Edmond Browne and Sir Kingsley Wood, M.P. London: The Insurance Publishing Co., Ltd. 1919. (Demy 8vo. pp. 415. £1 11s. 6d.)

[3] *Tropical Surgery and Diseases of the Far East.* Including Answers to a Questionnaire. By John McDill, M.D., F.A.C.S., Major, Medical Reserve Corps, U.S. Army. London: Henry Kimpton; St. Louis: C. V. Mosby Co. 1918. (Med. 8vo, pp. 302; 69 figures. 24s. net.)

[4] *The Forms of Alcoholism and Their Treatment.* By H. Wingfield, M.A., M.D., B.C.Cantab. London: H. Frowde, and Hodder and Stoughton. 1919. (Cr. 8vo, pp. 73.)

[5] *A Textbook of Chemistry.* By Samuel P. Sadtler, Ph.D., LL.D., Virgil Coblentz, Ph.D., F.C.S., and Jeannot Hostmann, Ph.G. Fifth edition, revised and rewritten. Philadelphia and London: J. B. Lippincott Co. 1918. (Med. 8vo, pp. xiii + 765; 143 figures. 21s. net.)

The war has in these last three years produced a great efflorescence of verse; time only will certainly tell of how many writers it may be truly said that the Muse has touched their lips with celestial fire. Dr. CAMPBELL MACFIE is not one of her new wooers, but he has felt the impulse of the times and has produced an ode, *War*,[6] which is the best thing he has done. It opens with a vision of the beginnings of the world, of the birth of the moon, and of later stages of the earth's story, written in what he will perhaps allow us to call plangent words. He passes, by a not unjust analogy, to the "noisy forges" that "beat the tune of death," next to the trenches "in desolate obscene Serbonian bogs," and then to an epilogue glorifying the spirit. The poem is a piece of vigorous sustained thought, brilliantly written. Dr. Macfie has also published a collection of his occasional verse in a volume entitled *Odes and other Poems*,[7] containing many graceful things. If the author wants our advice—but probably he does not—it would be to avoid weak adjectives at the end of a line, and to eschew bizarre words. He has too strong a command of the language to succumb to this passing fashion.

We have received from the well known Paris firm of publishers, Masson et Cie., a little work entitled *Le Français*,[8] by Monsieur P. DESSAGNES, professor of English at the Lycée Louis-le-Grand. It is an elementary French course intended for English and American children, and is based on the principles of what is called the "direct" method used by the teachers of modern languages in the secondary schools of the University of France. The teacher takes as a starting point the simplest terms—that is, the names of objects which can be shown, or represented in drawings. On these are built up rudimentary sentences whose meaning is self-evident, and these in turn are used to explain new phrases. By a slow and carefully graduated process the learner is led to the comprehension of idiomatic sentences. Moving always forward from the simple to the complex, each lesson amplifies that which went before and paves the way to that which follows, without need of a dictionary. This, the first volume of the course, seems to us admirable. The little sketches are designed to arouse the interest of children, for it is recognized that the part played by the pupil should be as active as possible and that the elements of the language should be presented in their most concrete form. If the book is used in the manner described in the preface it should lay the foundations for a thorough understanding of the French language. Those who have painful recollections of the dull grammars and exercise books of a former generation will wish that this "French without Tears" had existed in their day.

[6] *War*. By Ronald Campbell Macfie, M.D., LL.D. London: John Murray. 1918. (Cr. 8vo, pp. 72. 3s. 6d. net.)
[7] *Odes and other Poems*. By Ronald Campbell Macfie. London: John Murray. 1919. (Post 8vo, pp. viii + 136. 5s. net.)
[8] *Le Français. Enseigné par la méthode intuitive et directe*. Par P. Dessagnes, Agrégé de l'Université. Paris: Masson et Cie. 1919. (Cr. 8vo, pp. 304; illustrated. Fr. 5.)

MEDICAL AND SURGICAL APPLIANCES.

Triplex Glass.

THE use of "triplex" glass for the windows and screens of automobiles has become so general that the value of this glass is well recognized. During the war it was proved to be of the greatest service for goggles for airmen. For those who are not familiar with its construction we may state that this glass is made up of three layers of material, two of glass and a middle layer of xylonite. The three are firmly pressed together, so that they are practically indissoluble. The middle layer of flexible material makes very little difference to the transparency of the glass, but alters very materially its reaction to violence. A blow that would shatter an ordinary sheet of glass and endanger all persons who were near has quite a different effect on the triplex glass. This may be fissured and seamed by hundreds of fine lines; but the middle layer of flexible material holds all together securely, so that not a particle of the glass leaves its place in the fissured sheet. The stopping effects of the glass upon rifle bullets must be seen to be believed. The glass can be used for the manufacture of ordinary spectacle lenses. It is of great value for this purpose to short-sighted persons who are exposed to the risk of breakage of glasses—for example, in hunting, shooting, and motoring. The lenses can be ground to any combination of spheres and cylinders, just as the usual glass lens, and can be fitted into rims or mounted into rimless spectacles or clips. It is necessary to coat the edges of the lenses with an invisible varnish to secure the glass from the penetration of damp, but otherwise no special method of working is necessary. The lenses are a little thicker than the usual glass lens, and they have a faintly amber tint. This is not objectionable; in fact, it would be an advantage where glasses are worn to prevent glare effects, but the tint would reduce visibility slightly at twilight. We have specimens of these lenses worked in various denominations of minus spheres; they were prepared by Messrs. Melsom Wingate of London. The lenses are quite accurate, and although very thin the blow of a steel hammer only produced numerous fissures in the glass, and did not detach one fragment. Wearers of monocles would materially reduce their consumption of lenses by the use of this glass. The glass is made by the Triplex Safety Glass Co., 1, Albemarle Street, London, W.1.

Gland Dissector.

Mr. JAMES ADAMS (Eastbourne) has designed the small instrument shown in the drawing to serve as a dissector for operations on glands in regions where a knife cannot

safely be used. Either end may be used according as a straight or curved instrument is required. Mr. Adams says he has found it most useful. It is made by Messrs. Arnold and Sons, Giltspur Street, E.C.

A FERROUS IRON WATER.

AT Trefriw Wells, a short distance from the village of that name on the western side of the Vale of Conway, there are iron water springs of unusual character, inasmuch as the salt is in the ferrous state. When we visited the place shortly before the beginning of the war we were informed that the waters have a high local reputation in anaemia, but that the dose must be small, as indiscriminate use is apt to cause gastro-intestinal irritation. The waters were, it is said, used by the Romans. There are two springs which issued from two caves side by side, and originally the water was dipped up from one or other spring. The waters are now brought down to a small pump room by gravitation in glass pipes. When delivered at the counter both are quite clear. They are distributed in liqueur glasses to the patients at the wells, and the water is also bottled for sale at a distance in small phials.

An analysis made for us in June, 1914, showed in No. 1 water iron in the ferrous state equivalent to 2.21 grains of crystalline ferrous sulphate per ounce, the total iron in this being 2.62 grains. In No. 2 was found ferrous iron equivalent to 1.42 grains of crystalline ferrous sulphate per ounce, the total in this specimen being equivalent to 2.45 grains. The small proportion of iron not ferrous is presumably in the ferric state. The dose recommended is half an ounce twice a day for the first week, then three times a day for another week, and in the third and subsequent weeks one ounce twice daily; but further investigation appears to be desirable. The particular merit claimed for the well known iron pill commonly called Blaud's pill is that the iron it contains is in the ferrous state. Five grains of the pill contain 1 grain of ferrous carbonate. The amount of ferrous carbonate equivalent to the ferrous iron in one ounce of the No. 1 Trefriw water is 0.19 grain; in No. 2 it is 0.58 grain—that is, one ounce of No. 1 water is almost equivalent to one Blaud's pill, and one ounce of No. 2 water to nearly two-thirds of a Blaud's pill. The water when fresh is bright, clear, slightly acid, and not unpleasant to take. The pump room is small but well appointed; there is a comfortable hotel not far off and a few lodging houses. The surrounding country is beautiful and affords endless varieties of excursions on foot or by motor. Trefriw is easily reached by a branch line from Llandudno Junction (London and North-Western main line) in half an hour.

The special character of these waters seems to make them worthy of the attention of the profession.

A CAMPAIGN for the stamping out of venereal and other diseases has been started by the Government of Jamaica.

THE PREPARATION OF FINELY DIVIDED CALOMEL.

THE calomel of the *British Pharmacopoeia* is obtained by sublimation; it is obtained also by precipitation, but in either case is a rather dense heavy powder mixed with impurities. Duret [1] has endeavoured to prepare a calomel which would be light, finely divided, and easily dissociable in contact with living tissues. As such a substance is likely to be useful in the prophylaxis and treatment of venereal diseases the details of the method of preparation may be given.

Two solutions are freshly prepared, the one consisting of sodium bicarbonate 6 grams, pure glucose 10 grams, and distilled water 80 c.cm., and the other of magnesium chloride (crystals) 7.5 grams in 20 c.cm. of distilled water. These are mixed and the mixture is added in a flask to a third solution, consisting of corrosive sublimate 11.5 grams, pure hydrochloric acid 10 drops, and distilled water 100 c.cm. The whole mixture is shaken well and allowed to stand. There is an abundant evolution of carbonic acid, and simultaneously very finely divided calomel is precipitated. When the reaction slackens the flask is heated on a water bath with continual shaking, until practically no more gas comes off. The precipitate, after filtering and washing with distilled water, gives about 10 grams of calomel. In this reaction the sodium bicarbonate in the presence of slight excess of magnesium chloride is converted into sodium chloride and magnesium bicarbonate, and the latter, in contact with the hydrochloric acid from the dissociation of the sublimate, gives up its carbonic acid and becomes magnesium chloride, whilst the mercury bichloride is quantitatively transformed into the protochloride. It is necessary to observe accurately the proportions given, for an excess of magnesium bicarbonate would give a precipitate of magnesium carbonate, or an insufficiency of magnesium bicarbonate would leave some of the sublimate undecomposed. The calomel obtained by this method is much finer and lighter than ordinary calomel—it occupies about three times the volume of the latter—and its therapeutic properties would seem to be enhanced. It has been used extensively by Duret in the preparation of prophylactic ointment and also for injections in syphilis.

Formula for a Prophylactic Ointment.

The following is the formula for prophylactic ointment, which is stated to bring into contact with the living tissues extremely finely divided mercury in the nascent state:

Calomel (prepared as above)	10 grams
Magnesium chloride (cryst.)	10 ,,
Sodium bicarbonate	7 ,,
Thymol...	0.15 ,,
Camphor	0.35 ,,
Glycerinum amyli	15 ,,
Oleum arachi	15 ,,
Anhydrous lanoline	20 ,,
Distilled water	25 ,,

The magnesium chloride and sodium bicarbonate are triturated in a mortar with the quantity of water indicated, and then the calomel and the glycerin of starch are added. With gentle heat the lanoline and 10 grams of the peanut oil are melted together, and to this are added the thymol and camphor dissolved in the remaining 5 grams of the peanut oil. While still liquid this is added to the first mixture, and the whole beaten up to a homogeneous mixture. The magnesium carbonate which is formed in this reaction will be sufficient to neutralize all the hydrochloric acid that will result from the dissociation of the calomel when it is in actual use. The camphor and thymol, robbed of any irritative properties by solution in oil, are added as adjuvant antiseptics and as stimulators of tissue regeneration. It is claimed that this preparation, which is of a creamy consistence, is more suitable for application to mucous surfaces than other preparations, and that it allows of more thorough absorption of mercury into the tissues.

Calomel for Injection.

Calomel injections, though often causing considerable pain, are perhaps the best means of administering mercury in the treatment of syphilis. The pain is probably due to the hydrochloric acid set free by the dissociation of the calomel. Duret concludes that by adding a substance capable of saturating this acid at the time of its liberation the pain will be suppressed, and that by using a calomel in itself very finely divided, the mercury resulting will be more rapidly absorbed. He gives two formulae for the preparation of this calomel injection; we quote the second, as it is said to produce scarcely any discomfort.

Sublimate	6.775 grams
Pure HCl	5 drops
Glucose	5 grams
Sodium bicarbonate	8.65 ,,
Magnesium chloride	10.5 ,,
Distilled water	25 c.cm.
Syrup of sugar ... ... q.s. for	100 c.cm.

With this formula 1 c.cm. corresponds to 0.05 gram of mercury, or about 0.06 of calomel. The magnesium carbonate is formed in sufficient quantity to saturate the whole of the hydrochloric acid coming from the dissociation of the calomel produced.

[1] *Annales de l'Inst. Pasteur*, March, 1919.

ROYAL MEDICAL BENEVOLENT FUND.

AT the meeting of the Committee on May 13th twenty-three cases were considered and £310 voted to twenty-one of the applicants. The following is a summary of some of the cases relieved:

Widow, aged 45, of M.B.Glasg. who practised in Scotland and died in 1910. Was left without means, and endeavours to make a living by letting rooms. Has one son, aged 11. Owing to the high cost of living finds it difficult to manage. Voted £10 in two instalments.

Daughter, aged 68, of M.D.Lond. who died twenty-five years ago. Her mother, who was an annuitant of the Fund, has recently died. Applicant endeavours to make a living as a teacher of music, but, owing to the high cost of living, finds it impossible to meet expenses. Voted £18 in twelve instalments.

Widow, aged 61, of L.R.C.S. and P. Edin. who practised at Liverpool and died in 1894. Applicant has for some years acted as a mission worker, but, owing to ill health, has had to give it up, and is without means. Voted £15 in twelve instalments.

Widow, aged 39, of M.R.C.S.Eng. who died in 1917. Was left with five children, ages now 2 to 15; three are at school. Income £137 a year; rent and rates £44. A brother-in-law who allowed her £80 a year has recently died. Relieved once, £20. Voted £20.

Daughter, aged 49, of M.D.Dubl. who practised in the Isle of Man and died in 1882. Owing to war conditions does not receive full dividends from investments. Receives £40 from friends and £7 10s. from dividends. Is an invalid and unable to work. Relieved four times, £17. Voted £5.

Daughter, aged 64, of L.S.A.Lond. who died in 1874. Is unable to work owing to ill health. Income £25 from a friend and earns about £5 by occasional sewing. Relieved thirteen times, £130. Elected to an annuity of £20.

Daughter, aged 66, of M.R.C.S.Eng. who died when applicant was a child. Owing to ill health, the result of a street accident in 1916, she is unable to work, and has been living on the compensation she received and the grants from the Fund. Relieved five times, £34. Voted £12 in twelve instalments.

Widow, aged 64, of L.R.C.P. and S.Edin. who died in 1913. Was left very badly off; a son who used to help had to join the army; she receives 9s. 3d. a week separation allowance. Only other income some old book debts which during the past year have realized £26. Relieved twice, £22. Voted £12.

Daughter, aged 70, of M.R.C.S.Eng. who died in 1890. Applicant endeavours to make a living by letting rooms, but owing to the high cost of living and ill health finds it difficult to manage. Relieved three times, £34. Voted £12 in twelve instalments.

Subscriptions may be sent to the Acting Honorary Treasurer, Dr. Samuel West, at 11, Chandos Street, Cavendish Square, London, W.1.

The Royal Medical Benevolent Fund Guild is now called upon, as a result of the war, to deal with many widows and children who, in happier times, would not have thought of asking for assistance. It is glad to receive secondhand clothing and household linen. The class of clothes most wanted is that suitable for boys and girls working in offices, for women, and for old men. The gifts should be sent to the secretary of the Guild, 43, Bolsover Street, W.1.

THE American National Medical Association is a body consisting of 5,000 coloured doctors.

THE Elsie Inglis Unit of the Scottish Women's Hospitals, which was sent out to serve the Jugo-Slav Division of the Serbian army on the Macedonian front in February, 1918, and which took part in the Macedonian offensive of last autumn, was transferred to Sarajevo in Bosnia last December. The need for its services in that district having now ceased, it has been recalled. Before leaving for home all members of the hospital staff were presented with the Serbian Gold Medal for Meritorious Service. Owing to the demobilization of the unit the office of the London Committee of the Scottish Women's Hospitals at 66, Victoria Street, was closed on May 31st.

PORTRAIT OF SIR CLIFFORD ALLBUTT.

As announced a few weeks ago, Sir Clifford Allbutt has accepted an invitation to allow the profession to present to him a portrait of himself painted by an eminent artist. The Council of the British Medical Association has taken the initiative in the matter because Sir Clifford Allbutt has been President of the Association during the years of the war, and will preside over its Annual Meeting in Cambridge next year. The esteem due to Sir Clifford Allbutt's attainments and the warm affection inspired by his character are such that very many, both within and without the Association, will desire to share in this tribute to one whose career has reflected so much honour on medicine in England. This desire will not be limited to his many pupils, first in Leeds and afterwards in Cambridge, nor to the members of the Association, and subscriptions are invited from all members of the profession. The amount is limited to one guinea, and the Treasurer of the British Medical Association, 429, Strand, London, W.C.2, is prepared to receive subscriptions of one guinea or less.

The following is a further instalment of the list of subscribers; other subscriptions received this week will be acknowledged in an early issue.

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INCOME LIMIT FOR INSURED PERSONS.

DEPUTATION FROM THE BRITISH MEDICAL ASSOCIATION.

MAJOR ASTOR, M.P., as chairman of the Joint Committee for National Insurance, received at the Local Government Board on June 2nd a deputation from the Council of the British Medical Association on the subject of the foreshadowed bill to change from £160 to £250 the limit of remuneration affecting compulsory insurance of non-manual workers.

The deputation consisted of: Mr. E. B. Turner (Chairman of the Medico Political Committee); Dr. Haslip (Treasurer); Dr. H. B. Brackenbury, Dr. A. C. Farquharson, M.P., Major E. Rowland Fothergill, Dr. I. Johnson (Bury), Dr. J. Stevens (Edinburgh), with Dr. Alfred Cox, O.B.E., Medical Secretary, and Dr. Courtney Lord, Assistant Medical Secretary.

Dr. FARQUHARSON introduced the deputation and expressed the hope that, as a result of conference with Major Astor, a way might be found of relieving not unnatural apprehensions of many members of the medical profession, without prejudice to the substantial objects which the Government had in view in introducing the bill. Mr. E. B. TURNER stated that while the deputation represented the Council of the Association, of which body they were all members, and intended primarily to place before the Minister the views of the Council, they were free to express their individual views, which in some cases would go further in opposition to the proposed measure than did the Council. The Council recognized that there was a case for keeping in insurance persons of the class that Parliament originally intended to be insured, but the simple change of the income limit which was understood to be proposed might have the effect of bringing into National Insurance, and taking out of the sphere of private practice, a considerable number of persons who had hitherto had no difficulty in employing general practitioners to treat them as private patients. The Council, therefore, desired to press that whatever legislation was required should be so framed as not to have this effect. Dr. STEVENS and Dr. JOHNSON stated that meetings had been held of the doctors in their respective districts who objected to any alteration of the income limit as affecting any section of insured persons.

Major ASTOR having explained the precise nature of the proposals under consideration by the Government (as set out in the official statement printed below), which he believed had not been sufficiently understood, discussion turned chiefly on the question of the practicability of any provision which could restrict the effect of the proposed measure to those who were previously in insurance, keeping them from being excluded without introducing into insurance any who would not otherwise have been introduced. Eventually Major Astor stated that while he could not pledge the Government to put forward any provision of the kind, which so far as they had explored the subject appeared to be impracticable, they would be prepared to consider any practical amendment brought forward by a private member for the purpose, and Dr. Farquharson undertook to consider the matter in conference with the British Medical Association with a view to the possibility of some such amendment being devised.

Proposed Legislation for Amendment of National Insurance Act in respect of Limit of Remuneration affecting Insurance of Non-manual Workers.

1. The Government have decided to introduce a bill in the House of Commons shortly after the Whitsuntide recess for the purpose of securing that the intention of the National Insurance Acts is not defeated in certain respects by incidental consequences of the rise in the cost of living due to the war.

2. Under those Acts persons engaged in *manual* employment come within National Insurance without any regard to amount of income or rate of remuneration; but persons who are engaged in *non-manual* employment are excluded from compulsory insurance (by the First Schedule to the Act of 1911) when their rate of remuneration is in excess of £160 per annum. As a result of the increased cost of living, employers have almost universally found it necessary to grant war bonuses to workers; with the result that in a large number of cases (it is believed between half a million and a million) non-manual workers whose pre-war remuneration was less than £160 per annum receive remuneration exceeding that rate, although the circumstances of their employment are wholly unchanged, and they have not been taken out of the economic status of the persons comprised in the Act of 1911. If an amendment is not made in the Acts, such workers must lapse from insurance and lose all benefits, unless they are entitled and can afford to become voluntary contributors; and even then they are deprived of medical benefit, they are under more onerous conditions as to cash benefits, they lose their employers' contributions, and must themselves pay their weekly contributions at an enhanced rate. In the great majority of cases this lapse from insurance will take place on June 30th, and would have occurred earlier but for the so-called "free year's insurance" provided under last year's Act.

3. It has been widely represented to the Commissioners in the strongest terms, by large bodies of employers, by trade unions, and by many important societies, that for such persons to be deprived of the benefit of their previous insurance, as an almost accidental consequence of these circumstances, would create serious hardship and would defeat the manifest intentions of Parliament. The inequity resulting to the particular class affected would be seriously aggravated by the fact that the distinction between the manual and the non-manual worker is in many cases only technical, with the result that, as between two workers engaged upon closely similar work at the same remuneration, the one would retain his insurance while the other would lose it, solely on account of the technical legal distinction between them; this being a matter which cannot be met by any regulations of the Commissioners, since it is governed by decisions of the Courts mainly under Acts other than the Insurance Acts.

4. To preserve the *status quo ante* notwithstanding the altered conditions, an amendment of the Acts themselves is requisite. Such an amendment is accordingly proposed, not (it should be clearly understood) for the purpose of extending or modifying the present scheme of health insurance in any way whatever, but as the only possible means of enabling that scheme to continue to operate without its scope being artificially narrowed by the circumstances described above.

5. After close consideration it has become clear that this object cannot be secured except by substituting for the figure of £160, above referred to, some higher figure, so as to retain in insurance non-manual workers whose increase of remuneration does not exceed such higher figure. A careful investigation of a large number of employments demonstrates that the substitution of £250 affords the closest possible approximation to the extent to which wages have risen in the case of the classes of non-manual workers affected.

6. It should be mentioned that an incidental effect of this method of meeting the difficulty is that it fails to retain in insurance a certain number of persons hitherto insured, and at the same time may admit to insurance for the first time a certain number of persons not previously insured. This, however, cannot be avoided whatever be the figure adopted; and with the figure £250 the number of persons thus excluded or admitted is, so far as can be ascertained, so small as to be negligible.

7. It has been suggested in this connexion that the purpose in view ought to be attained, not by an alteration of the figure in the remuneration limit of non-manual workers generally, but by so framing the amendment as to retain

in insurance, specifically, the particular individuals, and only those, who are insured now or who have actually been insured at some particular date. This, however, it would seem impossible to carry out consistently with the practical application of compulsory insurance, for various reasons: in particular that the employer is under statutory obligation to stamp the cards of all his employees to whom he is paying wages that bring them within the Act; and he cannot be left to determine in each case whether he is under this obligation or not by reference to facts which often cannot be within his knowledge; nor, on the other hand, could the application of compulsory health insurance be made dependent upon the willingness of the employed person to provide the various facts needed to determine that the obligation does exist or does not.

8. It would seem, therefore, that if widespread hardship is to be avoided there is no alternative to the amendment above described.

9. It should perhaps be mentioned here that it has been supposed by certain doctors that the bill will substantially reduce their receipts from private practice, by transferring a number of persons from being their private patients to panel practice. This can hardly be the case except as to a very small number; and the Government cannot, on that ground, find justification for refraining from the amendment necessary to prevent the disqualification of those large numbers of insured persons who, without the amendment, will lose all the advantages of compulsory health insurance.

10. When these facts are realized it is hoped that the medical profession will not desire to support such objections to a measure which is believed to afford the only practicable method of averting the serious and widespread hardships above indicated.

MEDICAL APPOINTMENTS UNDER THE MINISTRY OF PENSIONS.

THE Director-General of Medical Services, Ministry of Pensions, has issued the following circular letter, dated May 26th, to deputy commissioners of medical services, chairmen of pensions boards, special medical boards and boards at discharge centres, medical referees, and secretaries of local war pensions committees:

Sir,

I am directed to inform you that in consideration of the fact that large numbers of medical officers have now been demobilized, it is the intention of the Minister to bring under review all existing appointments consistently with the prime consideration of the maintenance of efficiency.

So far as whole-time appointments are concerned, the Ministry has always been actuated by the principle of giving preference to medical men who have left their practices to serve in H.M. Forces, and it is deemed desirable to apply the same principle to appointments involving part-time service rendered on medical boards or as medical referees.

Medical Boards.—As regards medical boards, commissioners of medical services are, therefore, strictly enjoined gradually to replace whenever possible civil practitioners who have not served (attendance on medical boards is not to count as war service) by demobilized officers.

Medical Referees.—As regards appointments of medical referees, designedly temporary and provisional, these will be reviewed and thrown open to the candidature of all practitioners in every district, as and when those who have served have returned to their district. As and when the medical commissioner is able to notify to the Director-General of Medical Services that any district may be considered to have had returned to it all, or the bulk of, the medical practitioners who have served, instructions will be given to determine the appointment of all existing medical referees, and to invite fresh applications in order that every application may receive consideration on its merits.

I am, Sir, your obedient servant,
(Signed) A. WEBB,
Director-General of Medical Services.

We understand that the parenthetical sentence in the third paragraph of the circular, which states that "attendance on medical boards is not to count as war service," has been misconstrued by some medical men employed upon such boards into a reflection on the nature of the services they have rendered during the war. They maintain that many of them were not only willing to serve in the army, but offered their services and were precluded from so serving on account of age or physical disabilities. Many made financial sacrifices in order to do this work and at the same time to carry on the work of their colleagues who had joined the Forces. We are assured that the phrase in the Pensions Ministry circular was not intended in any way to belittle the valuable services rendered by these doctors. We have the authority of the Ministry to say that it recognizes to the full the excellence of the work done by medical men who have served on boards during a time of unexampled stress. The report of the Parliamentary Select Committee on Pensions (now sitting) is not published, but we are aware that Colonel Webb, Director-General of Medical Services, and Dr. Cunyngham Brown, Director of Medical Services, both commented in their evidence on the general excellence of the work done by the re-survey boards of the Ministry of Pensions, which are entirely civilian in composition, and whose members are selected from the panels of local general practitioners.

The object of the circular was to serve as a guide to officials of the Ministry in order that demobilized officers desiring employment should not suffer hardship or be at a disadvantage by reason of their absence on naval or military service. Moreover, it is sound medical policy, when dealing with men disabled in warfare, to give preference to medical men who have themselves had experience of the conditions of modern warfare, and have been concerned in the treatment of war diseases in the field and in military hospitals.

BIRTHDAY HONOURS.

A SERIES of ten Supplements to the *London Gazette* was issued on June 3rd containing a list of honours and awards conferred on the occasion of the King's birthday.

The following is a preliminary list of awards; those to medical officers—permanent and temporary—are granted in recognition of valuable services rendered in connexion with military operations in the various theatres of war.

K.C.M.G.

The Hon. Sir John McCall, M.D., Agent-General in London for the State of Tasmania.

K.C.V.O.

Mr. Joseph Oliver Skevington, F.R.C.S.

C.B.

Colonels: George W. Barber, C.M.G., D.S.O., A.A.M.C., Robert James Blackham, C.M.G., C.I.E., D.S.O., late R.A.M.C., Hubert Alaric Bray, C.M.G., late R.A.M.C., Stevenson Lyle Cummins, C.M.G., late R.A.M.C., John Vincent Forrest, C.M.G., late R.A.M.C., John Alexander Gunn, O.B.E., C.A.M.C., Henry Thomas Knaggs, C.M.G., late R.A.M.C., James Robert MacMunn, C.M.G., late R.A.M.C., Claude K. Morgan, C.M.G., late R.A.M.C., Thomas du Bedat Whaite, C.M.G., late R.A.M.C., Charles F. Wylde, C.A.M.C.

Temporary Colonels: Francis D. Boyd, C.M.G., A.M.S. (Major R.A.M.C.T.F.), William Pasteur (Lieut.-Colonel R.A.M.C.T.F.), C.M.G., A.M.S.

Lieut.-Colonels and Brevet Colonels: Arthur Chopping, C.M.G., R.A.M.C., Allan James Macnab, C.B., I.M.S., Arthur Lisle A. Webb, C.M.G., R.A.M.C., Sir Edward S. Worthington, K.C.V.O., C.M.G., R.A.M.C.

Lieut.-Colonels (acting Colonels): Harold Collinson, C.M.G., D.S.O., R.A.M.C.(T.F.), Ransom Pickard, C.M.G., R.A.M.C. (T.F.).

C.M.G.

Major-Generals: John Joseph Gerrard, C.B., A.M.S., Robert Porter, C.B. (ret. pay), James Thomson, C.B., A.M.S.

Colonel William Thomas Mould, late R.A.M.C.

Temporary Colonels: Charles Coley Choyce, C.B.E., A.M.S., Henry Wade, D.S.O., A.M.S. (Captain R.A.M.C.T.F.).

Lieut.-Colonel (temporary Colonel) Thomas Peel Dunhill, A.A.M.C., William Purnell Gwynn, R.A.M.C.

Lieut.-Colonels (acting Colonels): Alexander M. McIntosh, R.A.M.C.(T.F.), William Thomas M. Mackinnon, C.A.M.C., E. C. Montgomery-Smith, D.S.O., R.A.M.C.(T.F.), Andrew A. Watson, D.S.O., R.A.M.C.(S.R.).

Lieut.-Colonel and Brevet Colonel (temporary Colonel) William W. White, C.B., I.M.S.

Lieut.-Colonels: John Hubback Anderson, C.B.E., A.A.M.C., Seymour Gilbert Barling, R.A.M.C.(T.F.), F. Charles Bell, C.A.M.C., Sir James Kingston Fowler, K.C.V.O., R.A.M.C. (T.F.), Allan Coats Rankin, C.A.M.C., George McIver Campbell Smith, I.M.S., Ervin L. Stone, C.A.M.C., William Thorburn, C.B., R.A.M.C.(T.F.).

Temporary Lieut.-Colonels Claude Gordon Douglas, M.C., R.A.M.C., Percy W. G. Sargent, D.S.O., R.A.M.C., George R. Thomson, S.A.M.C.

Major and Brevet Lieut.-Colonel (acting Colonel) C. W. Holden, D.S.O., R.A.M.C.

Major and Brevet Lieut.-Colonel Cuthbert Garrard Browne, D.S.O., R.A.M.C.

Major (acting Colonel) Edward Lawton Moss, M.C., R.A.M.C.

Major (acting Lieut.-Colonel) Joseph Ward, D.S.O., 1/1st Home Counties Field Ambulance, R.A.M.C.(T.F.).

C.V.O.

Sir Alexander C. Houston, K.B.E.
Dr. J. Mitchell Bruce.

(*To be continued.*)

British Medical Journal.

SATURDAY, JUNE 7TH, 1919.

THE LISTER INSTITUTE.

THE Lister Institute is unique among the medical establishments of London, because it is an independent organization endowed by private benefactors. The only comparable institution is the London School of Tropical Medicine, which, however, is in the enjoyment of Government support. The Lister Institute is one of the schools of the University of London, admitted under the statute which empowers the senate to admit any institution within the prescribed area founded for the promotion of science or learning to be a school of the university for the purpose of research or the cultivation of any special branch of science or learning. Its director, Dr. C. J. Martin, F.R.S., is professor of experimental pathology in the university, while several members of its staff are readers or recognized teachers in the university. But its connexion with the university is otherwise shadowy and its affairs are managed by a governing body which includes Major-General Sir David Bruce, K.C.B., F.R.S. (chairman), Professor F. W. Andrewes, M.D., F.R.S., Professor W. Bulloch, F.R.S., Sir James Kingston Fowler, K.C.V.O., and Professor E. H. Starling, C.M.G., F.R.S. There is also a council containing representatives of the members of the Institute and of many learned bodies.

The report to be presented at the annual general meeting next Wednesday gives an account of the various activities of the Institute during the year, and contains a section in which its future general policy is discussed. A great deal of the time of the staff of the Institute—which, owing to the war, was much diminished—was given to routine bacteriological examinations for the London County Council and other public bodies, and the production of serums and vaccines for the War Office and the Government of Egypt. But some of the work done for the War Office has reached out to research, as, for instance, investigations made by Dr. Arkwright and Mr. Bacot as to the virus of trench fever and typhus fever, and the transmission of these diseases by lice. Miss Muriel Robertson has continued researches upon anaërobic bacteria of wounds and the preparation of standard samples of the toxin of *Vibrion septique* which have been used in preparing and standardizing the serums issued to the army from the serum laboratories of Messrs. Burroughs, Wellcome and Co. Much of present knowledge of the pathogenic anaërobes has been gained since the beginning of the war, and in its acquisition Miss Robertson, who is secretary of the Anaërobic Committee originated by the Medical Research Committee, has taken a prominent part.

In another direction researches stimulated by the war have yielded results of permanent importance to physiology and general medicine—and indeed to sociology and statecraft also. Dr. Harden and Dr. Zilva have made a series of investigations into the properties of accessory food factors and the effects of the deprivation of them on various animals. A related research was that conducted by Dr. Harriette Chick, at the request of the military authorities, into the cause of scurvy; it was eventually expanded to include certain other deficiency diseases. The research demanded the greatest care in the adjustment of the diets and the feeding of the animals, and the help of many volunteer workers was enlisted. This inquiry has had many parts, but those concerned with the quantitative determination of the relative antiscorbutic efficiency of natural foodstuffs, and with the loss of antiscorbutic value during the drying of vegetables, are now practically complete; work is still in progress with regard to the preservation of lemon juice and root vegetables, and as to the antiscorbutic and growth-promoting properties of cow's milk, with special reference to infant feeding. The novel feature of the investigations has been the attempt to get a quantitative estimate of the amount of accessory food factors in various foodstuffs, the first step being to determine experimentally for each substance the minimum daily ration which will protect the experimental animal. A committee on accessory food factors, with Professor Hopkins as chairman and Dr. H. Chick as secretary, has been sitting during the year, and has prepared a monograph to meet the needs of the general scientific and medical reader.

The serum department has manufactured very large quantities of serums and vaccines for the army and navy, and some experiments on concentration of antitoxin serum for practical purposes have been made by Dr. MacConkey and Miss Homer, and on the standardization of antimeningococcic serums by the first named and Mr. Roger, but without as yet any satisfactory result in the latter case.

The governing body has come to the conclusion that the work in diagnosis undertaken for various public bodies should be restricted in order that the whole energies of the Institute may be devoted to medical research, and incidentally it proposes that the name should be changed to the Lister Institute of Medical Research. But if a medical research institute is to achieve its aim to the full it must have control of a certain number of beds in a special hospital. The problems to be solved are presented by the disordered human body. It is only by study at the bedside that the natural history of disease can be ascertained. The patient presents the problems in the rough; by examination of the excretions, and of the products of disease, by biochemical, bacteriological, and protozoological methods, the problem can be narrowed down to a form in which it can be handed over to the experimental pathologist. The constitution of the Lister Institute does not permit it to possess a residential hospital, although it may treat as outpatients persons suffering from disease. It will be necessary, therefore, so to amend its constitution as to remove this disability, and thereafter to obtain funds for the provision of the hospital desired. The endowment of the Lister Institute is small compared with that of the Pasteur Institute in Paris, and very much smaller than that of the Rockefeller Institute in America. We think that this sketch of the work done during 1918, though it omits even mention of many valuable investigations, is sufficient to prove that an institution such as the Lister, self-governing but with a loose connexion with the university, has fully established its right to exist, and its claim on the enlightened public. It affords to the independent research worker facilities which he could not easily find elsewhere, and has already inspired and accomplished much valuable work. We hope that it may be able to continue its career of usefulness with the extension of its field of inquiry now proposed.

THE WORK OF THE FOOD INVESTIGATION BOARD.

THE report for 1918 of the Food Investigation Board,[1] appointed by the Lord President of the Council "to organize and control research into the preparation and preservation of food," contains much that is of interest to different classes of reader. The practical work of the board was organized by numerous sub-committees, each containing scientific and industrial representatives. The Fish Preservation Committee was mainly occupied with the investigation of a method known as brine freezing, in which the fish to be frozen are plunged into strong brine cooled to 10° F. or lower; they satisfied themselves that the principles of the method were scientifically correct, and have arranged to carry out experiments upon a larger scale. The Engineering Committee dealt with the type of wagon or barge best suited for the carriage of frozen produce, and enjoyed the co-operation of the staffs of various railway companies. The Meat Committee organized a number of researches of particular interest. Under the supervision of Professor Bayliss biophysical experiments are being made to determine why the qualities of beef are more easily impaired by refrigeration than those of mutton; autolytic *post-mortem* changes are being studied in Professor Hopkins's laboratory; Dr. Graham-Smith is investigating the life-history of putrefactive micro-organisms, and Mr. F. T. Brooks is studying moulds. The Oils and Fats Committee is concerned with the problem of refining edible fats, and is also maintaining a liaison with the committee appointed by the Medical Research Committee to elucidate the question of fat soluble vitamines. The Fruit and Vegetable Committee has divided the problem before it into a study of the chemical changes occurring during the maturation and storage of fruit; a study of the effects of various external conditions upon the fungi which cause deterioration of stored fruit; a study of the conditions to which fruit is subjected in commercial cold storage; and the testing of a small refrigerating plant for laboratory purposes. The committee has found that the problems are of considerable complexity—thus the presence of non-electrolytes in the sap considerably reduces its electrical conductivity, a source of error which seems to have been overlooked by earlier investigators of the physical changes in stored fruit.

It is of course too early to form an opinion as to the direct utilitarian value of the researches promoted by the board; of the importance of the problems under notice there can be no doubt. It will be seen that the board has appointed several committees. It took this step "with reluctance, for research by committee is suspect. In the pursuit of science the instinct of the individual counts for more than the combined intelligence of the many." There is a sense in which this epigram is true; the notion that new and valuable truth will be attained by the periodic convocation of experts who debate the items of an agenda paper drawn up by a lay secretary and pass for publication or blue-pencil the reports of subordinates is quite rightly suspect. But it does not seem to us that the system favoured by the board is open to this reproach, and we cordially approve of the delegation of much of the research work to university departments. We have always maintained that the function of the state is not to supersede the universities as centres of research and that it should only create new machinery when university laboratories cannot possibly be made available. The only proposal of this kind made by the board—namely, to establish a laboratory to deal with the applications of brine freezing at Lowestoft—fulfils our conditions because such a laboratory must be established at a great fishing port.

Except with regard to vitamines, the board is silent upon the general issues of nutrition, which are, indeed, outside its terms of reference. Nothing further has been heard of the proposal, made many months ago, that a permanent organization for the fostering of research into the problems of human nutrition should be set on foot. We shall, perhaps, have to wait until the Ministry of Health is in working order before this matter is placed on an entirely satisfactory footing.

[1] Published for the Department of Scientific and Industrial Research by H.M. Stationery Office. 1919. Price 3d.

CREMATION IN ENGLAND.

THE report of the Cremation Society of England recently issued[1] states that in the twelve months ended December 31st, 1918, cremation showed a considerable advance. Every crematorium in Great Britain recorded an increase of activity. The total number of cremations during 1918 was 1,795, as against 1,515 in 1917. The number at Woking was 142, as compared with 129 in the preceding year, whilst the corresponding figures for Golders Green were 820 and 719. The total number of cremations carried out in Great Britain since the opening of the Woking Crematorium in 1885 is 19,671. It is stated on the authority of *Hazell's Annual and Almanack* that the United States of America had seventy crematoriums in 1918 and that 13,226 cremations were carried out in that country during 1917. Among the persons of note whose remains were disposed of by cremation during the past year at Golders Green and Woking were Lord Courtney of Penwith, Lord Rhondda, Sir Alexander Rendal, Bishop Boyd Carpenter, Brigadier-General A. Wolfe-Murray, Lady Fisher (wife of Fleet Admiral Lord Fisher), Sir Hubert Parry, Sir William Dalby, and Sir Herman Weber. We need not repeat here the arguments that have been advanced many times in this JOURNAL in favour of cremation. It is unquestionably the best method of disposing of the remains of the dead in the interest of the living, and by preventing corruption it shows the truest reverence for those who have passed behind the veil. The sentimental objection has its root in want of imagination, while the theological difficulty seems to be founded on a materialistic conception utterly contrary to religious faith. Can any one not devoid of common human feeling believe that the wholesale destruction of men's bodies by shell fire and incendiary bombs has added to the horrors of war by depriving Christian soldiers of the hope of resurrection? This, which we hold to be the only rational view of the matter, makes us deplore the attitude which the Roman Catholic Church maintains in regard to cremation. So far from relaxing its *non possumus* on the subject, in the revised Codex of the Canon Law[2] the prohibition is made more stringent. Cremation is not only reprobated, but if directions are left by a deceased person that his body is to be burnt, these are to be absolutely disregarded; breach of this injunction is punishable by excommunication. Although signs are not wanting that the old prejudice against cremation is dying out in the enlightened classes there is still need of active propaganda to make its advantages realized by the community at large. For its work in this direction the Cremation Society of England deserves a much larger measure of support than it has yet obtained.

[1] Extract from *Transactions* of the Cremation Society of England No. xxx, 1919. 324, Regent Street, W.1.

[2] Codex Juris Canonici Pii X Pontificis Maximi jussu digestus Benedicti Papae XV auctoritate promulgatus. Romae, MCMXVII.

THE GOLDSMITHS' COMPANY'S CHAIR OF BACTERIOLOGY.

AT a meeting of the College Board of the London Hospital on May 26th a letter was read from the Clerk to the Court of the Goldsmiths' Company offering a sum of £15,000 for the endowment of a chair of bacteriology, to be known as the Goldsmiths' Company's Chair of Bacteriology. In making this gift the Court expressed the hope that its action might induce other organizations and individuals to consider the desirability of assisting the cause of medical education and research in a similar manner, a hope which all who have the interests of their country at heart must, we think, devoutly share, for in any attempt to remedy social evils, to prevent disease, or to improve the national physique, the existence and co-operation of a skilled and highly trained medical personnel is of primary importance. Such a personnel can only come from schools adequately staffed and equipped—in other words, adequately supplied with money. This is, we believe, the first instance of the endowment of a chair in connexion with any subject of the medical curriculum at any London medical school. It is to be hoped that other great city corporations or firms, according to their means, will follow the munificent lead of the Goldsmiths' Company.

TREATMENT OF CEREBRO-SPINAL FEVER BY MONOTYPICAL SERUM.

THE war produced conditions in this country, especially the overcrowding of recruits, which led to a great increase in the number of cases both among the military and civil populations. In 1915 the treatment by serum, which had previously been shown by Dr. A. G. Robb of Belfast and others to exert a most beneficial effect, was a failure, apparently because Flexner's serum was no longer available. The Medical Research Committee at once devoted their well organized resources to the investigation of the disease, with the result that scientific knowledge and practical prophylaxis have been greatly advanced. Lieut.-Colonel M. H. Gordon isolated his now familiar four types, of which Types I, III, and IV are relatively well defined, whereas Type II is more complex, three subgroups of it having been distinguished by Major W. J. Tulloch. A further important point established by Lieut.-Colonel M. H. Gordon is that the therapeutic value of anti-meningococcus serum depends not on its agglutinin titre, its opsonin content, nor apparently on its power to protect against the living meningococcus, but solely on its anti-endotoxin capacity. Utilizing these two advances Dr. Stanley Griffith,[1] working at the University Field Laboratories, Cambridge, under the Medical Research Committee, has prepared monotypical serums for each of the four types, by using a modification of Amoss and Wollstein's intensive method of immunization. These monotypical serums were tested at the Central Cerebro-spinal Fever Laboratory and not passed for therapeutic use by a number of selected clinical observers unless their agglutinin titre and anti-endotoxin capacity were satisfactory. An analysis of the first 90 cases treated with monotypical serums has been made by Major T. G. M. Hine, who has throughout been closely associated with Lieut.-Colonel M. H. Gordon's work. Until the type of infecting meningococcus is determined the pooled serum for Types I and II, which are responsible for 80 to 85 per cent. of all the cases, is given; but directly the infecting organism is typed the corresponding monotypical serum is substituted. The reasons for not giving in the first instance the pooled serum for all four types are that Types I and II were responsible for most of the cases, and that the anti-endotoxin capacity would thus be diluted four-fold. Of the 90 cases 7 died largely or solely from causes other than meningococcic infection, and may therefore be eliminated. Among the 83 cases there were 10 deaths, or a mortality of 12 per cent., thus contrasting most favourably with Flexner's 30.9 per cent. for cases treated with serum. In a further analysis of 58 cases in which the serum was administered before the seventh day of the disease, and therefore had a fair prospect of success, there were only 2 deaths, or a mortality of 3.44 per cent. The clinical success was most prominent in Type I—34 cases with 1 death—but among the 32 Type II cases there were 7 deaths, or a mortality of 21.9 per cent. This may be correlated with the laboratory observations that the present Type II serum does not contain such a large proportion of anti-endotoxin as does the Type I serum, and that Type II is complex, as shown by the absorption test. Lieut.-Colonel Gordon points out that possibly a more successful serum may be obtained by preparing horses each against a chief subgroup of Type II, and then, if necessary, pooling their serum. It is highly desirable that this should be tried, and it will then be most interesting to have a further report on a more extended series of cases.

[1] The Specific Treatment of Cerebro-spinal Fever, with an Analysis of the Reports on the first Ninety Cases Treated with Monotypical Sera. (1) Introductory Note by M. H. Gordon, C.M.G., M.D. (Temp. Hon. Lieut.-Colonel R.A.M.C.). (2) Analysis of the Ninety Cases by T. G. M. Hine, M.D. (Temp. Hon. Major R.A.M.C.). Medical Research Committee. 1919.

HISTORY OF MEDICAL CHARITY IN PERU.

MUCH has been written by English historians of the bad administration of her colonies by Spain, but there are redeeming features of which less is heard. In a recent number of *La Medicina Ibera* Dr. C. E. Paz y Soldan of Lima describes how public charity was dealt with in the conquest of Peru. The earliest document is an ordinance of Charles V, dated October 7th, 1541, ordering viceroys and governors to found hospitals for the care of the sick poor. By a further enactment, dated July 13th, 1573, Philip II ordered that wherever "any city, town or place should be founded," hospitals for non-contagious diseases were to be placed in the neighbourhood of churches; for contagious affections buildings were to be erected on high ground whence infection could not be conveyed by the air to the healthy population. When the Conquistadores set about organizing public administration, one of the first acts of the authorities of Lima was to provide funds for the construction of a hospital. In 1572 permission was granted to the confraternity of St. John of God to establish themselves in Peru; they were bound to render every year to the King a fully documented account of their stewardship. Another body of hospitallers was the congregation of Bethlehem founded in 1619 at Tenerife in the Canary Islands by Pedro de Betencourt and brought to Lima by the Viceroy, the Conde de Lemos. His successor, Conde de Castellar, gave them charge of hospitals in different parts of Peru, and the Crown assigned them revenues from various sources. A special tax called the hospital *tomin* (a silver coin) was levied from the natives. This tax produced 30,000 gold *pesos* annually, and further funds for maintenance were supplied by voluntary contributions and legacies, which were abundant and generous. From an early period Lima had a number of institutions for the relief of various forms of human need. There were hospitals for sick natives of both sexes—for lepers, for negroes and mulattos, for convalescents, for seafaring men, for poor sick clerics, and for foundlings. There was an institution for the care of Spanish women and the shelter of white girls from the dangers to which poverty exposed them. If they married, a dowry of 500 gold *pesos* was provided. Hospitals were established in the provinces of Peru and in Potosí, Buenos Aires, Paraguay, Cordova, and Tucumán. The Crown, which saw in these efforts of philanthropy a powerful political engine, encouraged the pious founder by extending to him its gracious patronage in the shape of a strict control of the institutions which he erected. Dr. Paz y Soldan says nothing of any part played by the hospitals in the advance of medicine because there is virtually nothing to be said. This

is accounted for by the lack of competent doctors and of any system of teaching. The holy men to whom the care of the sick was entrusted were in general indifferent to the claims of "poor brother ass," as Francis of Assisi called the human body. Their chief concern was the spiritual welfare of the patients, the cure of their diseases being left largely to nature. During all the time Peru was governed by the mother country the function of public authorities in regard to social assistance was limited to the supervision of the private charitable activities inspired by religious zeal. When the revolution freed the new world from the dominion of Spain and breathed the democratic spirit into the organization of social assistance, new ideas replaced the old colonial traditions. The Declaration of the Rights of Man played a vital part in the reforms which followed the intervention of the State in medico-sociological problems.

THE LIVERPOOL VICE-CHANCELLORSHIP.

At a meeting of the Council of the University of Liverpool, on June 3rd, it was unanimously decided to offer the post of Vice-Chancellor to Colonel J. G. Adami, M.A., M.D., D.Sc., LL.D., F.R.S., Strathcona Professor of Pathology and Bacteriology in the McGill University of Montreal. The vacancy is caused by the retirement of Sir Alfred Dale as from the end of next September. We congratulate the University of Liverpool on having sought the services of so distinguished a man of science as Professor Adami for this important post. The selection is interesting as forming another link between this country and Canada, and is an example of that interchangeability between seats of learning within the British Empire—as is Professor Elliot Smith's appointment first to Manchester and now to University College, London—which is so desirable in the interests of learning. Professor Adami, who is a Lancashire man by birth, had a distinguished career at Cambridge, where he took a first class in both parts of the natural science tripos. After serving as house-physician at the Manchester Royal Infirmary he was appointed demonstrator of pathology in the University of Cambridge in 1887, and became John Lucas Walker student of pathology in 1890. He was appointed to the chair at McGill University in 1892. His researches in pathology have been concerned with fundamental matters and his book on inflammation is a standard work. Throughout his career in Canada he maintained a close connexion with medical work in the widest sense, being advisory pathologist to the Montreal General and Royal Victoria Hospitals, and president of the Canadian Association for the Prevention of Tuberculosis. The position he attained on the American continent is shown by the fact that he was president of the Association of American Physicians in 1911–12. He came to this country shortly after the outbreak of war as A.D.M.S. on the staff of the Canadian Expeditionary Force; he is the medical historical recorder of that force and a member of the War Office Committee on the Medical History of the War. He has already published a first volume of a popular medical history of the Canadian contingents under the title of *The War Story of the Canadian Army Medical Corps*. He delivered the Croonian Lectures before the Royal College of Physicians in 1917, in which he discussed adaptation and disease with a freedom and originality which startled some pathologists and biologists and led to controversies the echoes of which have not altogether died away. These lectures formed a considerable part of the volume entitled *Medical Contributions to the Theory of Evolution*, published early last year. We are glad to learn that Professor Adami has accepted the appointment. It is very appropriate that the chief executive officer of the university of a modern and progressive city such as Liverpool should be a man of science.

PROFESSOR ELLIOT SMITH.

Professor Grafton Elliot Smith, F.R.S., has been appointed Professor of Anatomy in University College, London, in succession to Sir George Thane, who will retire at the end of the current session. Professor Elliot Smith is one of the most distinguished of living anatomists, and his researches in comparative anatomy, especially in the evolution of the central nervous system, have made him one of the great forces in biology. He was born at Grafton, New South Wales, in 1871, graduated M.B.Sydney in 1893, and M.D. in 1895. He was demonstrator of anatomy at Sydney and also at Cambridge, where he became a Fellow of St. John's College and graduated M.A. in 1902. He was for some time professor of anatomy in the Egyptian Medical School, and since 1909 has been professor of anatomy in the University of Manchester. He was elected F.R.S. in 1912 and F.R.C.P.Lond. in 1915. He was awarded the prix Fauvelle by the Société d'Anthropologie de Paris in 1911, and a royal medal by the Royal Society in 1912. He is giving the Croonian lectures before the Royal College of Physicians this month; the subject of his course is the significance of the cerebral cortex.

THE DETERMINATION OF OCULAR TENSION.

Mackenzie was one of the first surgeons to observe, in 1830, that the glaucomatous eye was abnormally hard. The importance of an accurate determination of the intraocular tension was soon realized, and it was not long before ophthalmologists began to doubt the accuracy of its estimation by palpation. As early as 1863 von Graefe and Hamer constructed tonometers of the impression type, in which the reading was obtained by pressing the instrument against the eye. It is obvious that an instrument of this nature is little if at all more accurate than simple palpation. The Priestley Smith tonometer was much more reliable, and was of the modern impression variety. The Maklakoff tonometer was of another type. It consisted essentially of a weight which had on its contact surface a flat disc of polished glass 1 cm. in diameter. When used the flat surface of the glass is smeared with a colouring solution and allowed to rest upon the cornea. Contact presses the coloured solution outwards, leaving a clear area equal to the flattened cornea. A transfer is made upon prepared paper, from which the computation of intraocular pressure is made. Until the Schiötz tonometer appeared the Maklakoff was the best, but the determination was lengthy and difficult. The Schiötz instrument was the first really practical and accurate tonometer, and is now employed by every up-to-date ophthalmic surgeon in the world. With it a determination can be made in a few minutes. The inaccuracy of palpation may be illustrated by the following incident: A patient was examined digitally at a meeting of an ophthalmological society by several ophthalmologists of repute. Their opinion as to the tension of the eye varied within wide limits. One said the tension was raised, another that it was normal, while a third that it was low. It is evident that digital examination is at best a coarse and uncertain method. No one would post a letter of doubtful weight with a balance at hand, and yet in the past many eyes have been committed to operation after examination by a procedure not nearly so delicate as judging weights by the hand. The Schiötz tonometer is provided with a metal cup curved to accommodate itself to the cornea. It is pierced by a central aperture which contains a metal rod. The upper end of the rod is fitted to hold weights of 15, 10, 7.5, or 5 grams, and it impinges against the lower end of a lever which registers upon an index. The cornea is anaesthetized with holocaine, a drug which does not dilate the pupil. The instrument is held by a loose handle upon the cornea, and a suitable weight which has been screwed on to the rod impresses the cornea and causes a deflection of the index. The softer the eye the more it is impressed, and vice versa. The reading of the scale is transferred to

a graph and the tension of the eye read off. A suitable weight must be selected—the heavy weight for hard eyes, the lighter weight for softer eyes. W. McLean of New York[1] has devised a modification of the Schiötz tonometer which avoids the change of weights and brings the scale low down, so that it can be seen without raising the eye from the cup which rests upon the cornea. McLean has calibrated his instrument by direct manometric measurements of a human eye which was to be enucleated.

R.A.M.C. MEMORIAL SERVICE.

As already announced in the JOURNAL, a service will be held in St. Paul's Cathedral, at 12 noon, on Wednesday, June 25th, in memory of the officers and men of the Royal Army Medical Corps who have fallen in the war. The number of those who gave their lives has been stated by Lieut.-General Sir John Goodwin, D.G.A.M.S., to be 560 officers and 4,091 other ranks. Applications for tickets for the memorial service should be made before June 12th to Captain A. R. Wright, D.S.O., R.A.M.C., personal assistant to the D.G.A.M.S., War Office, Adastral House, Victoria Embankment, E.C.4. We are informed that officers who have relinquished their commissions may return to khaki for the purpose of attending the service.

THE GROUP CONFERENCES.

IT has already been announced that group conferences are being arranged throughout the country to discuss the report of the Insurance Acts Committee (Document M. 25), and the memorandum of discussions issued by the Insurance Commissioners which have lately been circulated to every member of the profession in Great Britain. A brief outline of the report was given in the BRITISH MEDICAL JOURNAL of May 17th, 1919. For practitioners in London and the adjoining counties three group conferences will be held: the first on June 13th, in Essex Hall, for Middlesex, Berkshire and Reading, Hertfordshire, Essex, West Ham, and Southend; the second on June 20th (place not yet fixed) for practitioners in the London area north of the Thames; the third on June 27th, in Essex Hall, for practitioners in the London area south of the Thames, together with those in Surrey and Croydon, Kent and Canterbury. It is proposed to hold conferences in other centres as follows: Norwich, June 14th; Bristol, June 17th; Birmingham, June 18th; Plymouth, June 19th; Northampton, June 20th; Southampton, June 24th; Leeds, July 1st; Newcastle-on-Tyne, July 2nd; York, July 3rd; Nottingham, July 4th; Carlisle, July 8th; Cardiff, July 9th; Preston, July 9th; Manchester, July 10th; Chester, July 11th; Brighton, July 12th.

WE have to announce with great regret the death, on June 2nd, in his 74th year, of Mr. G. C. Franklin, F.R.C.S., who was President of the British Medical Association when it held its annual meeting in Leicester in 1905. A few years ago Mr. Franklin retired from the office of surgeon to the Leicester Infirmary, and settled at Fareham, where he died.

Medical Notes in Parliament.

Territorial Officers, Royal Army Medical Corps.

MAJOR D. DAVIES, on May 28th, asked the Secretary of State for War whether, though the Territorial Force has not been disembodied, a number of Territorial officers of the Royal Army Medical Corps are being demobilized against their wishes and before they have had an opportunity of obtaining appointments or practices; whether their places are being filled by retired officers who are receiving both pay and pension; and whether he will give any assurance that in future these Territorial officers will be given an opportunity to procure appointments or practices before they are finally compelled to relinquish their commissions.

Captain Guest: Territorial Force medical officers, in common with medical officers of the Special Reserve and officers holding temporary commissions in the Royal Army Medical Corps, are being placed on the retired and unemployed list as quickly as possible, and, as far as is known at the War Office, no retired medical officer has replaced a Territorial Force medical officer. As regards the last part of the question, I regret that I cannot give any such assurance. My hon. and gallant friend is no doubt aware that great pressure has been brought to bear on the War Office to release every medical officer whose services can be spared to meet urgent civil requirements. This policy has been, and will continue to be, carried out as far as possible.

Ministry of Health Bill.—The House of Lords, on May 29th, considered the reason submitted by the House of Commons for maintaining the demand that there should be two Parliamentary (or under) Secretaries for the Ministry of Health. The Lords, it will be remembered, had defeated the Government proposal, and held by a large majority that there should be only one under secretary. The Commons had again declared, at the instance of the Government, for two under secretaries. In the debate in the Lords on May 29th the arguments were again gone over, and the Lords, by 97 votes to 27, decided to insist on their amendment that there should be only one under secretary. In the House of Commons, on June 2nd, Mr. Bonar Law moved that the House of Commons should not insist upon its disagreement with the Lords—that is to say, that it should accept the decision of the Lords. The Government, he said, could not afford to lose the bill, and the alteration was not serious. It meant that the Minister of Health would be inconvenienced; although it was possible that this might be put right later on. It also meant that in the other House the department could not be directly represented. Mr. Law's motion was agreed to. On June 3rd the Royal Assent was given to the measure and also to the Scottish Board of Health Bill.

Plague Risks in Eastern and Central Europe.—Dr. Addison, in reply to Lieutenant Commander Kenworthy on June 2nd, said that the precautions for preventing the introduction and spread of plague in this country were contained in general regulations made by the Local Government Board in 1907. He was not aware of any special danger of an outbreak of plague in Eastern and Central Europe during the coming summer as likely to come from the blockade and war, but the precautions taken by the port sanitary authorities under the supervision of the medical department of the Local Government Board were very carefully carried out and strict watch was being kept on vessels coming from plague-infected countries. These measures had proved very effective in the past in protecting the country from plague. Lieutenant Commander Kenworthy: Is the right hon. gentleman aware that the medical profession are very much alarmed at the conditions which are likely to prevail next summer and that the ordinary means will not safeguard us, save with additions of exceptional means? Dr. Addison: I am well aware of the alarm to which the hon. gentleman refers, and, as a result, a joint body representing the different services has been at work on this subject for several weeks past. Captain W. Benn: Does the blockade exclude the sending of drugs to those countries? Dr. Addison: I cannot answer the question without notice.

Medical Attendance on Invalided Service Men.—Sir Philip Magnus asked the Secretary to the Local Government Board, as representing the National Health Commissioners, what was the amount of the pool for 1918 for medical attendance of invalided seamen, marines, and soldiers; and what amount, if any, remained in the pool on December 31st last, after payment had been made for such attendance. Mr. Pratt replied that the sum available from insurance funds for the calendar year 1918 in respect of the medical attendance on invalided men coming under special arrangement was approximately £78,000. So far from there being a balance, as suggested in the second part of the question, the quarterly sums received on account by the practitioners in respect of such attendance substantially exceeded that amount, involving supplementary payments from the Exchequer, in accordance with the scheme.

Board of Customs and Excise Medical Officer.—Mr. T. Wilson asked, on June 3rd, whether the position of medical officer to the Board of Customs and Excise, which had been vacant for three months, had been filled; and if not, what was the cause of the delay in filling that important position. Mr. Baldwin replied that the post had been vacant two and a half months. It was necessary that the holder of it should possess special qualifications, and careful consideration was therefore being given to the selection of the new appointee, whose name he hoped to be able to announce shortly. In the meantime the duties of the post were being efficiently performed by a locumtenent.

The Dogs' Bill.—It is understood that Sir Watson Cheyne will move the rejection of the Dogs' Bill when it comes up in the House of Commons for third reading on June 27th.

[1] *Archives of Ophthalmology*, January, 1919.

England and Wales.

BRIGHTON WAR HOSPITAL.

THE Second Eastern General Hospital, Brighton, which was established in August, 1914, immediately after the outbreak of war, was closed on May 19th. Colonel Robinson, A.D.M.S. Sussex, who inspected the unit, in saying good-bye, congratulated all on the result of the good work they had done at the hospital. Of its medical officers, ten have served overseas, and one, the late Major C. H. Benham, died of dysentery at Malta early in the war. Of the N.C.O.'s and men, 101 have gone abroad, and of the nurses, 144. The work of the nurses has been beyond praise; a high standard of care, efficiency, and kindness was maintained throughout. Some 70,000 men were admitted to the hospital, and there were about 500 deaths. A very large number of operations of every kind was performed. The hospital has supplied officers for the recruiting boards at Brighton and Chichester, for the National Medical Service Board at Brighton, for attendance at the prisoners of war camp at Hove, and for various services at the many camps in Sussex, including Shoreham, Crowborough, and Forest Row. In addition, specialist officers were provided for many services; the officer in charge of the ophthalmic centre, Major H. H. Taylor, was originally a member of the staff of this hospital, the medical officers at Lady Neville's Neurological Hospital were sent from the parent hospital, and operating surgeons were provided on special occasions at many of the smaller hospitals. The work of the many helpers, including the ladies who conducted the gift room and the Y.M.C.A. hut, and those responsible for the various concert and other parties, has been greatly appreciated. Medals were presented to a large number of lady helpers as a token of the assistance they had rendered. Colonel Apthorpe Webb, the administrator, said that he parted with the unit with great regret, the relations between all the officers, N.C.O.'s, and men having been of the most cordial during the long period of the war.

PRESENTATION TO SIR JAMES BARR.

Sir James Barr received on May 30th a presentation from the West Lancashire hospitals in recognition of his services as county director of auxiliary military hospitals in that area. Mr. Frank Tobin, who presided over a large meeting, said that to few had been granted Sir James Barr's opportunity and capacity in the work of succouring the sick and wounded. It had been a heavy task and those connected with the hospitals knew how he had seized the opportunity with both hands. For the greater part of five years he had given practically all his time to the work, showing promptitude, efficiency, tact, infinite patience, sympathy, energy, and invariable courtesy; the representatives of the West Lancashire group of hospitals had to acknowledge much helpful sympathy and wise counsel from Lady Barr also. Sir James Barr said that he did not claim to have done anything more than his duty, and for that the satisfaction of his own conscience would have been enough reward. The thanks of the country had been earned by those who found the money for the equipment and maintenance of the hospitals, by the medical men, by the V.A.D. nurses, and by the commandants and matrons, and the staffs generally. Without the auxiliary hospitals the War Office would have been unable to deal with all the wounded brought to this country. The presentation consisted of a silver salver bearing the following inscription:

> Presented to Sir James Barr, M.D., F.R.C.P., by the Auxiliary Military Hospitals of West Lancashire in grateful recognition of the eminent and invaluable services rendered by him as county director during the great war, 1914–19.

A gift was also presented to Lady Barr.

PRESENTATION TO COLONEL W. H. BULL, A.M.S.(T.R.).

Colonel W. H. Bull, on completing his appointment of Commissioner of Medical Services, West Midland Region, was, on May 28th, entertained by the deputy commissioners and medical staff at dinner at the Queen's Hotel, Birmingham, at which the medical profession of Birmingham was largely represented.

In the course of the evening he was presented with a very handsomely illuminated address on vellum, together with a pair of massive silver candlesticks (Elizabethan). The address was as follows:

> To Colonel W. H. Bull, K.H.S., D.L., J.P., F.R.C.S.Ed.—The close of your work as Commissioner of Medical Services for the West Midland Region has called for a general expression of deep regret from all of us who have worked under you on Recruiting and Pensions Boards, whether as your deputy commissioners or as medical officers.
>
> Your courtesy and consideration have endeared you personally to all who have come into professional relations with you. That the work of the boards during the past three stressful years has been so harmonious and so successful is largely due to your wise and tactful leadership, and we who have served on them owe to you an admirable medical organization of which we are justly proud.
>
> We wish to offer this expression of our cordial loyalty and deep personal regard to you, our professional chief, and of our affectionate wishes for your happiness and prosperity on retirement from your onerous duties.
>
> We beg your acceptance of the accompanying gift of plate in memory of your work here and of those who have been so happily associated with you in it.

During the afternoon the clerical staff presented him with a handsome leather writing case bearing his initials. The presentation was made at Queen's College (head quarters of the Ministry) by the senior grade official, in the presence of the staff.

Colonel Bull has been demobilized after four years and ten months' service. At the date of mobilization he was A.D.M.S. South Midland Division S.C., and at once joined his (48th) division, when after twelve months the division proceeded overseas, he was transferred to the 61st Division as A.D.M.S. He was afterwards appointed S.M.O. Birmingham, senior president of all medical recruiting, tribunal, and officers' boards, and medical inspector of recruiting, Southern Command. On the formation of the Ministry of National Service he was transferred to the Ministry as one of their first commissioners of medical services, and when the Medical Department was handed over to the Ministry of Pensions, he was appointed Commissioner of the West Midland Region under that Ministry.

During his military career Colonel W. H. Bull has been mentioned twice in dispatches.

PROPOSED NOTIFICATION OF FOOD POISONING.

Dr. Waldo, the coroner for the city of London, recently held an inquest with regard to the death of a man after eating the contents of two tins of sardines. The verdict was death from syncope and shock, caused by profound toxaemia following ingestion of tinned sardines. After hearing some observations by the coroner the jury adopted a rider, suggesting that all suspicious cases of food poisoning should be made compulsorily notifiable to the M.O.H. by the medical man attending the patient, with a view to the early detection and prevention of the sale of the particular parcel of food and to its bacteriological examination. Copies of the rider were sent by the coroner to the Local Government Board and the London County Council. We imagine that both these bodies will need a more precise definition of the term "food poisoning" than is afforded by the jury's rider. The term is in fact very elastic, and covers many conditions, varying from a slight attack of diarrhoea to a fatal illness.

Correspondence.

INTRAVENOUS INJECTIONS IN CHOLERA.

SIR,—In the address given by Sir Leonard Rogers to the Indian Science Congress at Bombay reference is made to the treatment of cholera by injections of saline solutions, with the object of replacing the fluid lost from the blood, which loss may amount to 67 per cent. of the plasma volume. The distinguished worker found that isotonic sodium chloride (0.85 per cent.) was practically useless, but that hypertonic solutions (1.2 per cent.) were of much greater value. Since the walls of the blood vessels are freely permeable to salts, there is no permanent difference of osmotic pressure between their contents and the tissue fluids outside them. Hence there is no permanent force to prevent the escape of fluid from the blood vessels. As long as the salt content of the blood, as raised by the introduction of hypertonic solutions, exceeded that of the

tissue fluids in his cases, there would be absorption of water and the blood volume would be maintained; but before long the salt concentration of the tissues would rise to that of the blood, and there would no longer be the difference of osmotic pressure necessary to hold the fluid in the circulation against the filtration due to the arterial pressure. This would explain the repeated injections found necessary by Sir Leonard Rogers. In some experiments that I made, 2 per cent. sodium chloride was found to leave the circulation and cause oedema, although not so rapidly as isotonic solutions did.

Although the walls of the blood vessels are permeable to salts, they are impermeable to colloids, so that if we could introduce a solution of a colloid which possesses an osmotic pressure it would not leave the circulation, and its property of attracting water and preventing loss by filtration would be more or less permanent. We have such a colloid in gum acacia. I have been able to show that a 6 or 7 per cent. solution of this substance in 0.9 per cent. sodium chloride maintains the blood volume under various conditions in which it was defective. Such solutions were used extensively in France for the treatment of haemorrhage and wound shock.

I would therefore venture to recommend the trial of the method in cholera. I understand that some steps have been taken at Aden in this direction. Gum saline has been used by Dr. Burkitt of Nairobi for blackwater fever and found to raise the blood pressure permanently and to restore the renal function. Sir Leonard Rogers refers to this last as a very serious factor in cholera, and the state in this disease appears to be such as promises better reaction to intravenous fluids than does blackwater fever.

The calcium bicarbonate contained in gum serves also to neutralize any acid produced in the tissues owing to defective blood supply, and if the physiological action of calcium is required no further addition is necessary.

Of course, the treatment by gum saline is not to be regarded as a cure in the ordinary meaning of the word. It keeps up the normal circulation and allows other means, such as are mentioned by Sir Leonard Rogers, to be used effectively.—I am, etc.,

University College, London, June 3rd. W. M. BAYLISS.

LIQUOR CONTROL.

SIR,—In your note on liquor control (BRITISH MEDICAL JOURNAL, May 10th) you sum up by saying: "So far as we are able to judge, the medical profession as a whole is not convinced of the necessity for total prohibition, but would, by a large majority, agree with the chairman [of the Central Control Board] in advising restrictions of the nature already indicated."

On Thursday last I had an opportunity of testing the value of your judgement. At a general meeting of medical men residing in this district, called for another purpose, I was allowed to invite signatures to the following memorial:

Memorial to His Majesty's Government.

In view of the great advantages to the efficiency and well-being of the nation and to public health and order which have followed the restrictions placed on the sale of intoxicating liquor during the war, the undersigned earnestly request His Majesty's Government to maintain these restrictions until a permanent measure of reform has been enacted by Parliament.

I was permitted to make a few remarks in support of this memorial, and to read the concluding passage of your note. I then passed the memorial round, asking those in favour to sign. I was glad to find that every doctor present had signed. I think this indicates quite clearly that your judgement was a sound one.

Now, Sir, I hope to go a step further, and ask the Council of the Association to send this or a somewhat similar memorial to the secretaries of the Divisions, with a request that the memorial should be brought to the notice of members attending the divisional meeting, and an invitation should be made to members to sign. No one can doubt the immense importance of liquor control on the future welfare of our nation, and no body of men is in a better position to educate the public on this subject than is the medical profession. Ought we, then, to stand aside and take no part in the matter?

I have for long felt that our status would have ranked much higher and our opinions have carried much more weight had we taken a larger share in public work, both collectively and individually, than we have, and I sincerely hope that in the immediate future the profession will take its rightful share in helping to solve many of the difficult social problems with which we are confronted.—I am, etc.,

Oxford, May 31st. WILLIAM COLLIER.

MEDICAL DEMOBILIZATION.

SIR,—Since my return to London a few weeks ago scarcely a day has passed on which I have not received either by post or from the officers in person, while on leave, appeals for my help to secure their demobilization. The majority of the appellants are naturally R.A.M.C. officers, but officers of the Royal Navy are also among them.

The present situation is, briefly, that there are many medical officers still detained in the R.A.M.C. and R.N. after three to four or more years of service who for a variety of reasons are extremely anxious to resume civil life, some to return to their neglected practices, some to enter on new practices awaiting them; others, and these a large number, to complete an education forcibly interrupted by the national necessity. No one who has attempted to help these men will fail to acknowledge gratefully, as I do, the sympathy and active aid in hard cases of the R.A.M.C. head quarters; or the interest and time lavishly given by Sir Watson Cheyne and others. But the Director-General can give little more than sympathy. It is his duty to provide for the medical needs of the army, and unless he has substitutes ready to his hand he cannot, with the best will in the world, replace the long-service M.O.'s who now in various parts of the world claim the relief which has been given to their luckier colleagues. The fault lies elsewhere, and the remedy is in the hands of him who made the error.

On December 19th, 1918, the Minister of National Service issued a memorandum, stating that:

To expedite the relief of medical officers who have been on medical service for a long period he has decided that newly qualified practitioners and medical students who have been protected from recruiting in order to obtain their degree or licence, will, as they qualify, be called up for service with His Majesty's forces as commissioned medical officers, and will continue to serve in this capacity till their services are no longer required.

In January, 1919, the Secretary of State for War threw over the whole machinery, painfully elaborated by the Ministry of National Service and the professional committees, which had hitherto worked with great success, with the result that he is now unable to release medical officers without imperilling the medical safety of the armies. The same remark applies, though in much less a degree, to the Royal Navy.

Mr. Churchill sent out the "Young" soldiers to relieve the long-service men of the combatant forces. I appeal to him to redeem the promise of his colleague and to call up without further delay the young newly qualified men who have not hitherto served abroad. This is the only method which can redress, and even so but partly, a serious injustice to men who, after long and faithful service, now feel that their loyalty is despised, and their appeals rejected and delayed by the procrastination of a politician unwilling to admit an error, and too occupied to consider any answer other than a bare "regret that the War Office cannot consider the release possible in the circumstances": the answer made by his representative in the House of Commons on May 27th.

The release of these men *is* possible if Mr. Churchill wills it. No doubt it is difficult for a Secretary of State to observe the ordinary obligations which ordinary men are wont to consider binding; it is difficult, but not impossible, to admit an error and retrieve a failure.—I am, etc.,

HUGH THURSFIELD, M.D.Oxon., F.R.C.P.,
Assistant Physician, St. Bartholomew's Hospital.

London, W., May 31st.

SIR,—Your recent statements on this subject have not brought much encouragement to those of us who, though "eligible for demobilization," are still retained for service in Germany and elsewhere.

Yet, Sir, after over four years' foreign service, it is hard to be retained by compulsion, to be left month after month without a line of official explanation, to read each

week a list of medical men one's junior by months and years who are getting back to practices and appointments, to watch whole units of every other branch and department of the service demobilized—but, worst of all, to feel oneself at the mercy of an uneconomical and unsympathetic administration.

I believe you will find few more deserving of your sympathy and none more grateful for your interest than

Germany, May, 1919. TEMPORARY CONSCRIPT.

INSURANCE: A FRESH START?

SIR,—I am afraid that Dr. Dain has missed my point. I am quite aware that if you take a sufficiently large number of variables, and a sufficiently prolonged length of time, you will be able to arrive at an average that may be taken as a constant. But there will be maxima and minima to make up that average, and it by no means follows that these maxima and minima will distribute themselves evenly in time and amongst the components of which they are functions. It will be no consolation to Dr. X. to know that his spell of overwork has been compensated by Dr. Y.'s slack time. Dr. Y. will not, of course, consider that he has had a period of compensatory overpayment, and should the occasion arise when he himself has to undergo X.'s experience, he will protest against working for underpayment. That is only human nature, which unfortunately refuses to submit to the law of averages.

Payment per attendance is the rule in most trades and professions, certainly in the lucrative ones. The only objections to the system I have ever heard voiced are based on two fallacies—first, that the clerical work entailed is prohibitive, secondly, that there is less money in it. As to the first, our six years' experience has completely refuted that argument, and as regards the second a moment's thought will show that unless the capitation is fixed at a figure that is beyond all reason a reasonable sum for each attendance must be lucrative. As a matter of fact, very few persons know what the real total of attendances is. We know ours here in Salford, and we have figures that we can guarantee as accurate. And unless the insured persons throughout the country are systematically exploited—which is, of course, absurd—our figures and Manchester's, which together deal with an insured aggregate of about 340,000, will give a fair basis for calculation, at least in town areas. If one properly schedules every medical or surgical attendance with its appropriate fee the whole vexed question of what is or is not a general practitioner service goes by the board. If the system were universal, with its absolute freedom of choice and freedom to continue or change, the profession would realize that the life of a doctor can contain a few happy moments.

I am afraid that I cannot follow Dr. Locket's arguments. Apparently an insurance card, if on the capitation basis, emanates a subtle aura of prophylaxis. I can assure him that I am not content with being paid for simply curing my patients. I expect payment even when I fail! The whole aim and object of a practitioner is to prevent or shorten illness. Can Dr. Locket have imagined that prior to the advent of the Insurance Act a medical practitioner was called in to a sick case merely because it was the thing to do and without any hope that his advice would have a favourable influence on the course of the disease? The example that he gives only makes confusion worse confounded. Why he should lose heavily by giving a special treatment to a private patient is beyond my ken, unless the results were uniformly fatal!—I am, etc.,

Salford, June 2nd. STANLEY HODGSON.

MIDWIFERY UNDER NATIONAL INSURANCE.

SIR,—The proposed inclusion of maternity work in our agreement with the Insurance Commissioners has come to most of us as a staggering surprise. Personally, in order to give more time to panel work I have been gradually giving up midwifery, as I found it interfere very much with the daily routine.

The objections to midwifery being included in insurance work may be summed as follows:

1. It will be midwifery under supervision. The Government pay the fee, and the Government referee can butt in at any time.

2. It is simply covering the midwife or unqualified practitioner. The present midwife has a training in antiseptics, but scientific knowledge of midwifery she has none. The unqualified midwife may attend cases on her own, send for the doctor when all is over, and so cover herself. This is done now, but it could and would be done on a much larger scale.

3. The majority of insurance practitioners do not want midwifery now, as it interferes so much with their ordinary work. In disposing of a practice lately I was much struck with the number of men who stated they did not want midwifery, and that a large percentage of confinements in a practice, so far from being a recommendation, was a drawback.

4. Panel practitioners can well leave midwifery to those not on the panel. It would be unfair to outside men to absorb midwifery into the panel.

I would suggest that the midwifery clause in the new agreement be made entirely optional. If made compulsory the suggestion is that one can contract out, but it may be very difficult to contract out—indeed, in some districts impossible. Few men would be anxious to take a partner or assistant solely for midwifery, as that would certainly not pay.

I should like to hear other men's views on this subject.—I am, etc.,

Birmingham, June 3rd. JAMES H. ORMOND.

REPORT OF THE CONDITIONS OF SERVICE COMMITTEE (M. 25).

A Disclaimer.

SIR,—There is nothing in the report (M. 25) which gives any indication of the fact that the report and its recommendations did not receive the unanimous approval of every member of the Insurance Acts Committee. I feel compelled, however, to state that I left the Committee with a protest against the report, having previously indicated objections to some of the more important of the suggestions of the said Committee. I am sorry that I did not insist on my right to issue a minority report, but as that is too late, I must be content with a personal protest, and indicate that I do not approve of the report, and must not be taken as having given my assent to it. Indeed I take the strongest objection to many of the recommendations and comments contained therein. In my opinion the interests of the panel medical practitioner have been grievously betrayed, and if the conditions of service are to be altered on the lines indicated in the report, the professional life of the general practitioner will become almost intolerable. Other memoranda will have to be issued, which will give information as to the character of the committee's report and of the extraordinary memorandum which accompanied it from the office of the Insurance Commissioners. The report may be very pleasing to the Commissioners, but will, I believe, be received with a great deal of dismay by medical practitioners when they are fully acquainted with the alterations which would follow the acceptance of the report of the Committee and the memorandum of the Insurance Commissioners. I am very sorry to find myself so strongly at variance with the Insurance Acts Committee, but a sense of the responsibility resting upon me as an individual member compels me to issue this protest. Other opportunities will occur in which I may be able to outline what I consider are the proposals which cannot be accepted.—I am, etc.,

Crewe, June 1st. WILLIAM HODGSON.

THE NATIONAL INSURANCE DEFENCE TRUST.

SIR,—In the SUPPLEMENT of March 22nd, 1919, appear particulars about this proposed fund. Again, in the annual report of the Council of the British Medical Association (BRITISH MEDICAL JOURNAL SUPPLEMENT, May 3rd, 1919, page 82) there appears a further reference to it. As there are now being made proposals to induce other medical societies to assist this fund, and as under the conditions of the fund it will affect the interests of all, whether members of the Association or not, it should be carefully considered in order to determine whether it has been formed on sound lines.

As one who considers that the objects and conditions of the fund are not sufficiently broad, and who would like

these amended before it has gone too far, I would ask you to publish the following constructive criticisms. Before doing this, it would be advisable probably to enumerate certain principles which it is suggested should govern a defence fund. These principles include the following:

(*a*) Seeing that under the Ministry of Health there will be gathered eventually all forms of medical service, thus affecting the interests of all medical practitioners, any fund formed for defence purposes should be able to receive contributions from and to benefit every registered medical practitioner, and should be of personal interest to each one.

(*b*) There should be only one fund for the whole medical profession, as the medical profession cannot be expected to support adequately more than one defence fund.

(*c*) In order to encourage general medical approval, it is desirable to associate in its formation, subsequent organization, and management as many recognized medical societies as possible.

(*d*) That the objects and policy of the fund should receive the approval of all co-operating societies.

(*e*) That the body controlling the fund should be elected on a scheme elaborated and approved by the several societies co-operating, and should be absolutely independent of any likelihood of Government interference.

Now, how are these principles met by the proposed defence fund?

1. The name indicates that its objects are limited to the Insurance Acts and any extension or modification of these. Thus a large number of medical practitioners would refuse to have anything whatever to do with it, thereby failing to fulfil principle (*a*).

2. As such practititioners (many thousands) would in time find it necessary to form a similar fund, principle (*b*) would not be fulfilled.

3. There is no provision made for carrying out principles (*c*), (*d*), and (*e*) (first part).

4. The policy of the fund is to be determined at meetings of statutory bodies (Local Medical and Panel Committees) which owe their existence to Parliament and can be modified or caused to cease to exist by it, no new similar bodies being formed. Principle (*e*) (second part) is vitiated.

5. Whilst the policy of the Trust is to be decided on by one body (Local Medical and Panel Committees), its management is to be carried out by a committee of another body (British Medical Association). But the latter body has to act also under the instructions of the Council of the British Medical Association (By-law 73), which itself acts under the instructions of the Representative Body, and determines the policy. Also, no meetings of the statutory bodies can be held in order to arrive at a policy unless called together on the sole "discretion and judgement" of the Insurance Acts Committee. Do these statutory bodies appreciate their servile position in regard to their own money and policy? Does the Representative Body appreciate that the Council has approved the formation of another body to determine a medical policy, thereby assisting to the establishment of a rival in politics? Is there in existence in British politics anywhere a grouping of statutory bodies with a defence fund formed to fight their progenitors if need be? Would a Government allow its statutory progeny to continue to exist under such proposed conditions?

It is very noticeable how the panel practitioners have gradually become convinced that the Local Medical and Panel Committees have been formed to safeguard their interests only, and are now taking the next step of looking to them as fighting units if and when the time arrives.

It should not be forgotten that these committees were formed primarily to assist in the improvement of public health and in the advancement of medicine locally. If the profession desires organized fighters, it would do well to look elsewhere. Statutory bodies would hardly be allowed to take up martial attitudes to the Government.

With regard to the five principles enumerated, some medical practitioners may possibly desire to add a sixth—namely, "that the fund should be protected by all the powers of a trade union," thus rendering it impossible for any one to seize the funds. Well, there would be no objection to this if the next logical step were also advocated—namely, that the fund should be controlled by "men of straw"! Then there would be no financial inducement for any one to try a fall with the Trust. But could any subscribers be obtained under such conditions?

I will not dilate on the possibility of the Local Panel and Medical Committees instructing the British Medical Association Committee to take an action which would be contrary to the latter's memorandum, thereby involving its buildings, finances, and constitution in a débâcle, but I would urge all medical practitioners to consider seriously at this juncture the situation about to develop if this Trust Fund is launched as proposed, and to express their views through their Divisions, societies, and local committees. Promises of subscriptions already received show that a strong defence fund is desired but nothing more. What would seem to be required just now is a policy providing for ultimate union in the profession, and not one which seems to contain the seeds for just the opposite.—I am, etc.,

Hove, Sussex, May 19th. E. ROWLAND FOTHERGILL.

*** Dr. Fothergill appears to have forgotten that a Conference of representatives of various medical organizations was held on May 6th at the invitation of the British Medical Association, as reported in the SUPPLEMENT of May 17th. At that Conference a committee consisting of representatives of bodies attending the Conference was appointed. This committee has held two meetings, and will, we understand, present a report to a further meeting of the Conference summoned for June 6th.

OPTIONAL OR COMPULSORY GREEK AT OXFORD?

SIR,—At the third attempt in the course of the last twelve years, and after months of discussion, those resident members of the university who object to compulsory Greek have, by an overwhelming vote in congregation, carried a statute to make Greek optional in the examinations leading to the B.A. degree.

But it is understood that the defenders of compulsory Greek intend to bring up their supporters from the country for the final voting in convocation on Tuesday, June 17th, in the hope of throwing out the statute, and maintaining compulsory Greek in Responsions.

May we, through your columns, appeal to Oxford medical graduates, of whatever opinion, not to leave the decision to one class of voters, but to make it more fully representative by coming up to register their votes in convocation? Greek is already optional at Cambridge, and, in the interests of the Oxford Medical School, it is of great importance that our medical graduates should come to Oxford and personally record their opinion on this pressing question.—I am, etc.,

Oxford, June 3rd. E. W. AINLEY WALKER.

A TUBERCULOSIS SERVICE.

SIR,—Professor Kenwood does not definitely disagree with the principle involved in our claim that the tuberculosis officer should direct home visitation and after-care. His only objection seems to be that this policy could not be made general, because special tuberculosis nurses and visitors are the "luxury only of the boroughs and of some county councils," and in many areas the nurse or visitor has to do child welfare and other work. Tuberculosis officers will not only endorse his statement but also deplore its corollary—that in many areas the arrangements for combating tuberculosis are inadequate. Special tuberculosis nurses and visitors, so far from being "luxuries," are essential in any comprehensive scheme. We suggest that where they do exist the policy of the Tuberculosis Society should be adopted. Will the Society of Medical Officers of Health agree to this?

To our claim that the tuberculosis officer should be the sanitary authority's direct adviser on the clinical prevention of tuberculosis, Professor Kenwood refers to "the advantages of one chief administrative medical officer." I should like to endorse, from personal experience, the well known fact that in many county and metropolitan boroughs there is close and friendly co-operation between the medical officer of health and the tuberculosis officer. Nevertheless, it is not certain that the "advantages of one chief administrative medical officer" are "so great that no change is likely to take place." If a Parliamentary Committee were to inquire into the treatment and prevention of tuberculosis in Great Britain, it would find the most efficient schemes to be in areas where the chief clinical tuberculosis officer is direct adviser to the sanitary authority, and the most inadequate arrangements in places where he is not. These facts do not prove my contention, but do appear to call for further inquiry. It is unfortunately true that to-day under a "national" scheme the possibility of any poor or insured consumptive getting adequate treatment depends on the pure chance of where he lives.

The following is the kind of arrangement which calls for redress alike in the interest of the public and of the tuberculosis service. In a county borough, which if necessary I will name, with a population of 140,000, the following appointments and salaries are held. For acting as "medical officer of health," "chief tuberculosis officer," "advisatory tuberculosis officer to the Insurance Committee," and as "school medical officer," one gentleman receives £900 a year. The "school medical inspector" who does the actual clinical work receives £500. A third gentleman, who does the actual clinical work in the dispensary, is called "assistant tuberculosis officer" and receives £270, being exactly £10 more than the happy Herefordshire rat-catcher mentioned in your columns a few weeks ago. He is also "resident physician to the fever hospital," for which he receives £130.

The Local Government Board by its circular of December, 1912, permitted a medical officer of health, in exceptional circumstances and when he had the necessary qualifications, to act as a clinical tuberculosis officer, and the safeguards in that clause have not always been observed. In some places the medical officer of health became "chief tuberculosis officer" with an addition to his salary. The local authority was then able to advertise for an "assistant tuberculosis officer" at £250, without the appointment being challenged by the British Medical Association, although in reality the "assistant" was actually to do the work of a chief clinical tuberculosis officer, whose minimum salary had been fixed at £500.—I am, etc.,

HALLIDAY SUTHERLAND,
London, May 31st. President of the Tuberculosis Society.

PROPHYLACTIC USE OF QUININE IN MALARIA.

SIR,—The letters of Colonel Rawnsley (April 19th) and of Dr. Newell (May 17th) lead me to make a suggestion on the point whether quinine—or rather quinine sulphate, as it was the sulphate which was used—is any use as a prophylactic against malaria. It is that the opinion of R.M.O.'s who served in the Struma Valley during 1916 and 1917 might be taken on the matter, more especially as regards the incidence of malaria during 1916.

If a unit is spread out over six or seven miles of front and the ration of quinine has to be sent in bottles (whisky), with the ration parties, accidents may, and did, occur. Quinine sulphate was at first given to the M.O. of units in bulk, and by them made into solution in rum jars; later on it was made into solution at the field ambulances. In the equipment of the field medical pannier there are no scales; this was got over by the issue of a tin measure to hold 10 grains. When tablets were issued, they also consisted of quinine sulphate, and more often than not passed in the motion undissolved. We did not get tablets of quinine hydrochloride.

Before the war I generally found that a mosquito net played a big part in the prophylaxis of malaria; during 1916 there was no mosquito net. The issue was one square yard a man. We were not allowed to demolish any of the cottages; they were wanted as billets during the cold weather. It is not possible to drain the valley, as most of it is below the bed of the Struma. The inhabitants occupied the valley when we went there first. During 1917 there was an issue of a proper mosquito net, and most of the troops were withdrawn during the summer months to the foothills. Also there was an increase of the administration of quinine, and more constant and better supervision. But the harm was already done.—I am, etc.,

Leamington, May 18th. W. H. SUTCLIFFE, M.B.

BY decree dated May 13th an inspectorship of the surgical services of the French army was created in connexion with the subsecretariat of State of the health services. Inspector-General Sieur, President of the Consultative Health Committee, has been appointed to the new post.

A SCHEME for a 56-hour working week for nurses has been approved by the board of management of the South London Hospital for Women. When the nursing staff is at full strength every member will have one whole day off duty in seven. Night nurses will be given four nights off duty a month and one and a half hours' rest away from the wards during the night. The salaries of the nursing staff have been raised during the past year.

Obituary.

LIEUT.-COLONEL JAMES COATS, R.A.M.C.(ret.), died on May 11th at a nursing home at Ayr, aged 70. He was a son of the late Dr. Coats, who was treasurer of the Faculty of Physicians and Surgeons of Glasgow, and graduated with honours at Glasgow University in 1869. He was a resident at the Royal Infirmary, and was for a time clinical assistant to Lord Lister when he was introducing his antiseptic methods. He had many pleasant recollections of Lister, and was fond of telling his experiences of that interesting period. He was a noted raconteur, and nothing pleased him better than to see his friends and have a talk on things new and old. He entered the army as assistant surgeon in 1871, retiring with the rank of lieutenant-colonel in 1896. He served in India, South Africa, and at home. On his retirement he was appointed to Ayr Barracks. He was a member of the Town Council for two years from 1910. During the war he acted on the Medical Service and Pensions Board. He was a most genial, kindly, and sincere man, who will be greatly missed by his many friends.

LIEUT.-COLONEL RALPH HOLYOAKE, R.A.M.C. (retired), died in hospital on May 18th, aged 57. He was born at Droitwich on November 26th, 1861, and educated at the London Hospital, taking the diplomas of M.R.C.S. in 1883 and the L.R.C.P.Edin. in 1884. He entered the R.A.M.C. as captain in 1886, and became lieutenant-colonel in 1906, retiring at the end of 1917. He served in Somaliland, in the Zaila Field Force, in 1890, and in the South African war, when he took part in the operations in Natal in 1899, and was present in the actions of Elandslaagte, Reitfontein, and Lombard's Kop, and throughout the defence of Ladysmith, including the sortie of December 7th, 1899, and the action of January 6th, 1900; in the operations in Natal in 1900, including the action at Laing's Nek on June 6th–9th; in operations in the Transvaal in 1900, with the actions at Belfast and Lydenburg; and in the Transvaal and Orange River Colony in 1901, receiving the Queen's medal with five clasps.

MAJOR FRANCIS MORTIMER TAYLOR, M.C., R.A.M.C.(S.R.), was killed in action on March 17th, presumably in Russia, though the place is not stated. He was the younger son of J. Taylor, C.B., Assistant Under Secretary, Dublin Castle, and was educated in Dublin, taking the diplomas of L.R.C.P. and S.I. in 1914. He joined the Special Reserve of the R.A.M.C. as lieutenant on September 23rd, 1914, was promoted to captain on April 1st, 1915, and recently to major.

MAJOR HUGH HUNTLY ROBINSON, M.C., Royal Air Force Medical Service, was killed in an aeroplane accident at Mons on May 3rd, aged 29. He was the second son of Dr. H. Shapter Robinson of Epsom, was educated at the London Hospital, and took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1912. He took a temporary commission as lieutenant in the R.A.M.C. on April 10th, 1915, was promoted to captain after a year's service, and recently joined the medical branch of the R.A.F. with the rank of major. He received the Military Cross on November 14th, 1916, and a bar thereto on June 4th, 1918.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on May 31st the degree of Doctor of Medicine was conferred on E. S. Taylor, C. A. Dottridge, and R. Ellis.

Mr. H. W. C. Vines, of St. Bartholomew's Hospital, has been elected to a junior Fellowship at Christ's College.

Dr. J. P. Lowson has been appointed demonstrator in experimental psychology for five years.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FINAL EXAMINATION.—J. J. Connolly, C. T. Cullimore, J. Danaher, T. N. D'Arcy, Ella Gleeson, P. N. Hegarty, B. F. Honan, C. L. L. Wilson, Norah McCormick, D. J. F. O'Flanagan, E. Waide.

D.P.H.—C. F. Murphy.

Medical News.

THE KING has approved the appointment of Sir William Watson Cheyne, Bt., K.C.M.G., to be His Majesty's Lieutenant for the islands of Orkney and Shetland.

THE Prince of Wales has accepted the position of Grand President of the League of Mercy. The office was formerly held by King Edward VII and by his present Majesty.

THE date of the annual meeting of the Metropolitan Counties Branch to be held at 429, Strand, W.C.2, has been changed from Friday, June 27th, to Thursday, June 26th, at 4.30 o'clock.

THE King of Spain has conferred the Grand Cross of the Civil Order of Alfonso XIII on Madame Curie, Professor in the Faculty of Sciences of the University of Paris.

IT is hoped that the report of the interdepartmental committee on the training of tuberculous discharged men will be ready soon after the Whitsun recess.

Major-General Sir Neville Howse, V.C., K.C.B., F.R.C.S., and Major-General Sir Robert Jones, C.B., F.R.C.S., have been appointed Knights of Grace in the Order of the Hospital of St. John of Jerusalem. The same distinction was conferred posthumously upon the late Colonel E. B. Hartley, V.C., C.M.G.

AT the meeting of the War Emergency Fund of the Royal Medical Benevolent Fund held last week, Lieut.-Colonel Sir A. P. Gould in the chair, applications for assistance were considered, and grants amounting to £1,420 made to ten persons. Applications for assistance should be made to the Honorary Secretary, 11, Chandos Street, Cavendish Square, W.1, who will also be pleased to receive donations.

DR. JOHN JOHNSTON of Bolton, who has resigned a number of public medical appointments held by him for many years, has received presentations from the officers and nursing staff of the Townleys Hospitals and Fishpool Institution, Bolton, in token of the respect and esteem in which he is regarded.

THE Ingleby Lecture of the University of Birmingham will be delivered on Wednesday, June 11th, at 4 p.m., by Dr. Walter R. Jordan, senior physician to the Children's Hospital, Birmingham. The subject of the lecture is fibrositis, rheumatism, and rheumatoid arthritis in childhood.

THE conference of the universities of the United Kingdom has requested the representatives who visit the universities of France to convey to them its cordial greetings and congratulations, and its desire for the growth and consolidation of their fraternal relations, in the interest both of humane learning and science and of international comity and progress.

THE annual meeting of the British Science Guild will be held at the Goldsmiths' Hall at 4 p.m. on Tuesday, June 17th. Among the speakers will be the president (Lord Sydenham), the Right Hon. J. E. B. Seely, C.B., M.P., Sir J. J. Thomson, O.M., President of the Royal Society, and Sir Robert Hadfield, Bt., F.R.S. Cards of admission can be obtained from the secretary, 199, Piccadilly, W.1.

THE Medical Society of London, at a general meeting on May 12th, had before it a motion to delete the by-law excluding women from attending the society either as Fellows or visitors. An amendment providing that a woman might be introduced as a visitor by a Fellow to not more than three meetings in any one session was carried. At a second general meeting, on June 2nd, this amendment was submitted as a substantive resolution, and was lost by 28 votes to 8. The proposal accordingly fell to the ground, and the by-law excluding women either as Fellows or visitors remains in force.

A MEETING of the Society for the Study of Inebriety will be held in the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W.1, on Tuesday, July 8th, at 4 p.m. After a short address by the president, Sir Alfred Pearce Gould, a discussion on alcohol and alcoholism in relation to problems of demobilization will be opened by Professor G. Sims Woodhead.

THE Moncrieff Arnott chair in Clinical Medicine in the University of Edinburgh becomes vacant during the summer, and the University and Royal Infirmary have appointed a joint committee to consider the candidates for this post. The patronage is in the hands of the University Court. The salary is £700, and, unlike the Therapeutic chair, private practice is allowed to the holder. The vacancy is due to the retirement of Professor William Russell under the age limit.

AT the congress of the Royal Sanitary Institute, which opens at Newcastle-on-Tyne on July 28th, the President, the Duke of Northumberland, will give an inaugural address. Sir Robert Hill, K.C.M.G., M.D., the new Director-General of the Medical Service R.N., will give a lecture on marine hygiene and Sir Robert Philip a popular lecture on the heritage of health. There will be five sections and a series of conferences will be held during the meeting.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

The postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2631, Gerrard.
2. ACTING FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Medisecra, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

QUERIES AND ANSWERS.

"R. C." desires to hear of any medical experience of the use of cuprase in malignant disease of prostate.

A SEA HOLIDAY TO THE WEST INDIES.

"M.B.," who contemplates a trip to Jamaica, leaving England on August 14th, asks as to suitable clothing and the risk of malaria.

*** There is no danger of acquiring malaria if "M.B." stays at the main port of call. Thin clothes will be required, as the temperature in August will be high; thin cellular undershirts are probably the best. The voyage may be recommended from a health point of view.

ANTENATAL CONDITIONS AND CHILD WELFARE.

DR. GLEN DAVISON asks to be referred to recent articles on antenatal conditions affecting child welfare work.

*** Numerous articles on the subject have been published during the past four or five years, and we can only make a selection, but it will at least put our correspondent on the right road. Of articles in the BRITISH MEDICAL JOURNAL we may mention that by Dr. J. W. Ballantyne on the nature of pregnancy (February 14th, 1914) and two on antenatal hygiene by Dr. Amand Routh, published the one on the same date and the other on April 25th, 1914. Reference may also be made to the discussion on the registration of stillbirths at the Edinburgh Obstetrical Society, reported in our issue of June 6th, 1914. For the past three years the monthly journal, *Maternity and Child Welfare*, has reported progress in these departments of public health. Many articles have been published in America, especially, perhaps, Whitridge Williams on "Prenatal Care," in the *Journal of the American Medical Association* (January 9th, 1915), and many in the *American Journal of Obstetrics*. The reports of the Carnegie U.K. Trust on the physical welfare of mothers and children, especially that on Scotland (1917), may be consulted, as also the discussion at the Pathological Club, Edinburgh (*Edinburgh Medical Journal*, May–June, 1917).

HEXAMINE: OPIUM.

"IGNORAMUS" inquires as to (1) the action of hexamine on the cerebro-spinal fluid, and (2) the alleged bad effect of opium in affections of the kidney.

*** 1. A report on urinary antiseptics to the Science Committee of the British Medical Association by Dr. Anson Jordan was published in the BRITISH MEDICAL JOURNAL (1913, vol. ii, p. 648). It contained an account of a series of experiments on hexamine (hexamethylenetetramine) and some of its derivatives. It was shown that in acid urine about 10 per cent. of the drug was split up into formaldehyde. In alkaline solution no dissociation occurred, but the drug was found to disintegrate slowly in any neutral solution, yielding formaldehyde to a very small extent—about 0.05 to 0.1 per cent. It is considered probable that so readily soluble a substance permeates the tissue fluids generally, and it has been found in cerebro-spinal fluid, bile, and saliva. As all these fluids are alkaline, any appreciable antiseptic action would not be expected, but,

Dr. Jordan adds, "none the less, a faintly alkaline and ammonia-free cerebro-spinal fluid is very different to alkaline urine, and if any formaldehyde were present in it it would continue to exist and exert its action." He found that helmitol (hexamethylenetetramine-anhydro-methylene-citrate) yielded *in vitro* formaldehyde as readily under the influence of alkalis as of acids. He considered these drugs, but especially helmitol, were worth further trial in meningitis. Professor Cushny (*Textbook of Pharmacology and Therapeutics*, seventh edition, page 163) says that there is little evidence that hexamine is of benefit in affections of the central nervous system, gall bladder, or pancreas. Hexamine has been given largely in meningitis, especially cerebro-spinal meningitis, but the majority of observers seem to have been unable to convince themselves that it produces any effect.

2. With regard to opium, Cushny (ibid., p. 258) observes as follows: "Morphine and opium are often said to be contra-indicated in Bright's disease of the kidney. This seems to be due to the belief that morphine is excreted in the urine, which has now been shown to be erroneous. There seems no reason to believe that morphine is harmful in these conditions, and in some forms of uraemia it has even been of considerable benefit."

CRANIUM AND PELVIS.

"A. C." writes: A small pelvis and troublesome delivery make me ask whether any careful comparison has been made with respect to the radiate evolution of the human skeleton. For example, would lower jaw or scapula be the analogue of the ilium, and from the inion to the mastoids represent the pelvic outlet? Or are there any means of judging pelvis from head or cranium?

*** Undoubtedly the shoulder girdle is the homologue of the pelvic girdle; it includes the scapulae and clavicles, but has nothing to do with the lower jaw. The cranium in a rachitic subject shows characteristic defects of development, but a woman with a small non-rachitic pelvis may have a well developed skull. No formula for calculating the dimensions of the pelvis from the diameters of the skull would be of any value in practical obstetrics.

ARRANGEMENTS FOR DISPENSING BY CHEMIST.

DR. R. C. M. COLVIN-SMITH (Cromer) writes in reply to "M.D.": On the commencement of the Insurance Act in 1913 I arranged with the chemists of this town that they should do all the dispensing for the doctors on the following terms: (1) The doctors agreed to give up all dispensing of their own medicines except in cases of urgency. (2) The chemists agreed not to prescribe over the counter to any person or perform any minor surgical operation beyond "first aid." In consideration of above terms the doctors will send their prescriptions to any of the chemists who entered into this agreement, the chemist retaining the prescription as a voucher, and not allowing the patient to obtain it without the doctor's permission given in writing. The prescription to be marked "P.A." (private account). The medicines, etc., supplied to be paid for by the respective doctor on whose prescription they are dispensed and on the then scale of tariff (as agreed on by the National Insurance Commissioners). With regard to methods for avoiding complex bookkeeping, etc., I use Carlyle's duplicate prescription book, and easily check the chemists' quarterly accounts when rendered. This system has been a great success, and I have had no complaints from either doctors or chemists.

LETTERS, NOTES, ETC.

REDUCTION OF FEES OF LOCUMTENENTS.

"LOCUM" writes: Since the signing of the armistice there has, I notice, been a tendency to reduce the fees of locumtenents. Seeing that food, clothing, and house accommodation are as dear as ever, I consider this unjust, especially in the case of men, like myself, with a limited income and a complaint (rheumatism) that prevents me at times, especially in winter, from taking any active work.

PITUITRIN IN MIDWIFERY.

DR. R. ROLFE (Avonmouth, Bristol) writes, with reference to the interesting note by Dr. E. Arthur Dando (April 5th, p. 432): I have been using pituitrin for a good number of years, and am an enthusiastic advocate of it; but I have been perhaps less fortunate or less skilful than Dr. Dando in a considerably larger number of cases. I have found the following troubles, all of which are, I believe, avoidable; an account of them may be of use to practitioners who have not had experience of pituitrin.

1. Different samples of pituitrin have very different degrees of activity. I have had the best results with Burroughs, Wellcome and Co.'s infundin, but I always now use the 1 c.cm. ampoules.

2. If the injection is given too early, before the os is well dilated, there is in my opinion danger to the child from pressure asphyxia. The obvious remedy for this is to follow Dr. Dando's advice, and wait for full or nearly full dilatation, especially in the case of primiparae.

3. On two or three occasions the uterus has contracted on the placenta, causing a very troublesome form of retained placenta. This can, I believe, be avoided by rapid removal of the placenta after the birth of the child, by expression if necessary. It is not in my opinion wise to wait for pulsation in the cord to cease before doing it. In the majority of cases the uterus itself rapidly expels the placenta.

4. I have had three very bad cases of delayed *post-partum* haemorrhage coming on about twelve hours after labour. These were, I think, caused by a clot being retained in the same manner as the placenta may be. In neither of the cases was any placenta or membrane retained. All the cases recovered, but had given me a "bad" half hour. I am now always very careful to see that clots as well as placenta are quickly removed from the uterus, and I give ergot (liquid extract ʒj) immediately after the delivery of the placenta, and follow it by three or four 2-grain ergotine pills given at four-hour intervals.

I claim for pituitrin (1) that it shortens labour, thereby saving suffering to the patient and to the busy practitioner; (2) that it has reduced my forceps cases by about 50 per cent.; (3) that the patient loses very little blood; (4) that by the good contraction of the uterus "after-pains" are lessened; (5) that by the action of the pituitrin on the bowel and bladder troublesome flatus and retention of urine are avoided.

If it is true that we learn from the mistakes of others, perhaps this confession of my shortcomings may benefit someone in the profession.

RHEUMATIC TONSILLITIS.

CAPTAIN W. T. G. BOUL, R.A.M.C., M.B., Ch.B., writes: The following short account of two cases of rheumatic tonsillitis seen in India may be of some little interest:—Pte. —— 8th ——, aged 24, was first seen in the usual way on a Tuesday morning complaining of sore throat and pain on swallowing. The throat in the tonsillar region was inflamed and exquisitely painful to touch. The redness did not spread beyond the pillars of the fauces, nor did the tenderness. He was treated with a gargle of sodium phenate and a paint of tannic acid and glycerin. On the following morning the pain and tenderness was almost entirely confined to the left side, though the right tonsil was still swollen and inflamed. He was then treated with sodium salicylate gr. xv twice a day, and was manifestly better the next morning. After four days of this treatment he was perfectly recovered. The case of Captain ——, aged 23, was very similar. At the commencement there was pain, redness, and tenderness of the right tonsil; the left appeared normal. Twelve hours later the symptoms had become transferred to the opposite side, and the right tonsil appeared almost better. A small gland in the neck was enlarged. He was treated with sodium salicylate gr. x three times a day, and aspirin gr. x each night, and eventually recovered completely. He stated that many times he had in England been subject to similar attacks of acute tonsillitis, which shifted from side to side in a remarkable manner. Owing to the shifting nature of the pain, etc., the absence in both cases of rise of temperature or pulse, and the nature of the treatment which proved beneficial, I think there can be no doubt as to the diagnosis.

MENTAL EXAMINATION OF A MURDERER.

THE man Beckett, a discharged soldier who has been sentenced to death for murdering a family in the East End of London, has been examined by Sir Robert Armstrong-Jones, Dr. W. H. B. Stoddart, and Dr. Hubert Norman. They appear to be unanimously of opinion that he is not responsible for his actions, and that he is probably a congenital mental deficient. The man gives a history of epilepsy. Representations are being made that the case should be retried in view of the evidence as to the man's state now obtained. From a perusal of the documents before us we are disposed to agree that the case ought to be reviewed.

THE following appointments of certifying factory surgeons are vacant: Letterkenny (Donegal), Malling (Kent).

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Seven lines and under	0	6	0
Each additional line	0	0	9
Whole single column	4	0	0
Whole page	12	0	0

An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.